# Contextualization of the role of bilingualism and cultural maintenance behavior for well-being, sociocultural adjustment, and ethnic identity among diverse ethnic groups in Indonesia

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# CONTEXTUALIZATION OF THE ROLE OF BILINGUALISM AND CULTURAL MAINTENANCE BEHAVIOR FOR WELL-BEING, SOCIOCULTURAL ADJUSTMENT, AND ETHNIC IDENTITY AMONG DIVERSE ETHNIC GROUPS IN INDONESIA


Betty Tjipta Sari

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# CHAPTER 1

## INTRODUCTION

# 1

## INTRODUCTION

Bilingualism (the ability to speak two languages) can have positive as well as negative relations with psychological outcomes in adolescents. Early studies supported the view that bilingualism hindered children's cognitive development and academic achievement (e.g., Saer, 1922, 1923) and could increase stress, anxiety, and depression (e.g., Adler, 1977; Park, 1928; Rudmin, 2003; Stonequist, 1935). However, later evidence supported the view that bilingualism can have a positive impact on intellectual development and subjective well-being (e.g., Bialystok, 1999; Han & Huang, 2010; Tran, 1994). It has been found that bilingualism is positively related to self-esteem, the ability to socialize in diverse settings, leadership abilities, peer competence, and psychological well-being in youth (Birman, 1998; Han & Huang, 2010; Szapocznik, Kurtines, & Fernandez, 1980). The findings on how bilingualism among adolescents relates to both positive and negative outcomes leave out a remaining question: "What moderates the relation between bilingualism and positive outcomes such as well-being?" or "in what conditions/contexts bilingualism may relate positively or negatively to psychological outcomes?" Especially because there are very few studies on the relation between positive psychological outcomes with bilingualism among adolescents in non-Western countries, this piece of puzzle is not yet resolved and is needed to be studied. Only around 12% of the research focus on youth and adolescence - and most of this research is conducted in Western, educated, industrialized, rich, democratic (WEIRD) societies (Celenk & van de Vijver, 2011; Henrich, Heine, & Norenzayan, 2010).

This project will contribute to the underrepresented body of research among adolescents outside Western contexts. In many Western contexts, the major dominant culture is the host society's culture and its accompanying national language/s which is usually known as the dominant language. In this project, I studied bilingualism and its ramifications in Indonesia, which is, as explained below in more detail, a linguistically very different context compared to Western contexts. My project aims to answer the following questions: 1) to what extent bilingual language usage and ability, the core concepts of this thesis, are a function of the adolescents' cultural context, and 2) whether both usage and ability have positive or negative relations with psychological outcomes such as well-being, identity, and adjustment in adolescents outside the context of majority research.

Various definitions of bilingualism have been proposed. Bilingualism can be defined as the ability to speak two languages. This definition is broad, difficult to operationalize and it does not acknowledge that the experience of bilingualism can be different across cultures (Ramírez & García, 2014). Ianco-Worrall (1972) defined bilingualism as the dual acquisition of language in a person in an environment. Bilinguals who learn two languages simultaneously from birth are described as simultaneous bilinguals, and they may or may not be fully competent in each of their languages (Genesee, Paradis, & Grago, 2004). Simultaneous bilinguals and second language learners, who learn the second language later, may or may not be fully competent in each of their languages. Hamers and Blanc (1989) identify different dimensions of bilingualism, including competence, cognitive organization, age of acquisition, the usage of the second language in the community, social status of the two languages and group membership. McNamara (1967) characterized bilingualism as language competency and proposed that bilingualism comprises a minimal

competence in one of four language skills (i.e., listening comprehension, speaking, reading, and writing) in a language other than the mother tongue.

Bilingualism can also be associated with biculturalism or multiculturalism (LaFromboise, Coleman, & Gerton, 1993). Many bilinguals learn two languages while also learning about the cultures associated with the languages. These two cultures may be internalized as part of their identity. Individuals who have been exposed to and have internalized two cultures are referred to as bicultural (Benet-Martínez, Leu, Lee, & Morris, 2002). Bilinguals who have high bicultural identity integration (BII; i.e., they are able to see their two cultures as compatible, Benet-Martínez & Haritatos, 2005) are more likely to use the languages of their two cultures in their everyday lives, but bilinguals who have low BII (i.e., they see their two cultures in opposition and in conflict, Benet-Martínez & Haritatos, 2005) are less likely to maintain the languages of both cultures. Individuals who live in multicultural societies must engage with and are shaped by more than one language and culture (Morris, Chiu, & Liu, 2015). The proficiency in each language among bilinguals, such as Indonesian adolescents who live in a multicultural country, may vary and bilinguals may be considered as monocultural or bicultural (Ramírez & García, 2014). How bilinguals may vary in their language ability and language usage in Indonesia will be discussed in the next section.

Characteristics of the sociocultural context, family, and community may influence the maintenance or loss of the heritage language in the process of becoming a bicultural or multicultural individual (Nesteruk, 2010; Zhang & Slaughter-Defoe, 2009). During that process, a person may experience stress and adjustment that leads to growth in intercultural communication skills over time and these intercultural communication skills are important for communicative adjustment (Cai & Rodriguez, 1996; Kim & Ruben, 1988). People who have to deal with cultures other than their heritage culture may experience psychological changes, such as cultural stress and/or sociocultural adjustment (e.g., Van de Vijver & Phalet, 2004; Yağmur & Van de Vijver, 2012). Adjustment or adaptation during cross-cultural transitions can be broadly divided into two categories: psychological and sociocultural (Searle & Ward, 1990; Stone, Feinstein, & Ward, 1990; Ward & Kennedy, 1996; Ward & Searle, 1991). The former refers to positive feelings of well-being and satisfaction, and to negative feelings of distress or loneliness. Sociocultural adjustment is concerned with the competencies to fit in or negotiate interactive aspects of the host culture. Such aspects are cultural knowledge, (small) cultural distance, quantity and type of contact with other groups, cultural integration, and language ability (e.g., Ward & Geeraert, 2016; Ward & Kennedy, 1993, 1996; Yang, Noels, & Saumure, 2006). As part of this project, sociocultural adjustment will be studied, which comprises cultural knowledge, cultural distance, quantity of contact with other groups, and cultural integration.

There are many studies about sociocultural adjustment among immigrants (e.g., Dimitrova, Chasiotis, Bender, & Van de Vijver, 2013; Van de Vijver & Phalet, 2004), but less is known about adjustment of non-immigrant bilinguals, such as majority groups who come into contact with other cultures as a consequence of globalization and migration, or multicultural archipelago countries like Indonesia where culture and language are isolated by geographical context but people migrate from one island to another within one country. Moreover, although there are Asian studies among adults about the relation between bilingualism and well-being (e.g., Han, 2009; Hong, Morris, Chiu,

& Benet-Martínez, 2000), the question of how bilingualism of adolescents in an indigenous setting relates to adolescents' adjustment, identities, and well-being still needs to be answered.

This project examines to what extent bilingualism is important for adolescents in a multicultural, indigenous setting. There is no majority group in Indonesia, since the biggest ethnic group (Javanese) is only around 40% of the total population in Indonesia, but it is the most dominant group in Indonesia (Suryadinata et al., 2003).

## STUDY RATIONALE

A study in Western immigration contexts has shown that differences in language use and valuation of one immigrant group (Turkish) across different contexts of residence (e.g., Australia, France, Germany, the Netherlands; see Yağmur & Van de Vijver, 2012). One context of residence is in France where Turks are discouraged to use their ethnic language but it is also difficult for the Turks to become accepted by the mainstream group. This exclusion combined with language assimilation is associated with less use of Turkish but also less identification with the mainstream group compared to other countries (Yağmur & Van de Vijver, 2012). Given the regional and ethnic differences in Indonesia, similar to different contexts of residence of Turkish immigrant, it may appear that the pattern of languages spoken at home may differ across ethnic groups. Indonesia provides a unique multicultural context for studying psychological outcomes which relate to bilingualism because almost all ethnic groups, including the dominant Javanese group, need to acquire Bahasa Indonesia, the *lingua franca* (Suryadinata et al., 2003). In the majority of Western immigration contexts, the language of the dominant group is usually the national language (*lingua franca*). As discussed in Extra and Yagmur (2005), related to state's language policy, there is a distinction between a "rationalized" language regime and a "multilingual" regime (Laitin, 2000). The state has a "multilingual" regimes if a state has not pursued any form of rationalization or due to the social and political circumstances the state recognize the language rights of minority populations. A state has a "rationalized" language regime by a rationalization through the recognition of a *lingua franca,* and not through the recognition of the language of a majority group (such as French in France) or rationalization through the recognition of the language of a minority group (such as imposition of Amharic on Ethiopia). Referring to Laitin (2000), because Bahasa Indonesia is imposed as the main language for educational and administrative purposes, Indonesia has a "rationalized" language regime by a rationalization through the recognition of a *lingua franca* (Bahasa Indonesia).

In immigration contexts, state integration and language policies of immigrant receiving societies are clustered into four prototypes; pluralist, civic, assimilationist, and ethnist ideologies (Bauböck, Heller, & Zolberg, 1996; Bourhis, Moïse, Perreault, & Senécal, 1997). These four prototypes are applied by states as follow: (1) A state which provides support for language classes and cultural activities to promote mother tongue maintenance alongside second language proficiency is most typically described as an example of a *pluralist ideology*, (2) whereas the state with a *civic ideology* neither interferes with the private values of its citizens nor provides any provisions for the maintenance or promotion of linguistic or cultural values of minorities, (3) when a state employs policies that are indicative of an *assimilation ideology*, the state would expect a linguistic and

cultural assimilation into the mainstream society, and (4) a state with an *ethnist ideology* expects cultural assimilation but there are ideological and institutional barriers for immigrant minorities to be accepted legally or socially as full members of the mainstream society. Referring to these four prototypes, it can be said that Indonesia has a *pluralist ideology* for the indigenous groups, because the state provides support for language classes and cultural activities to promote mother tongue maintenance alongside Bahasa Indonesia. But Indonesia has an *assimilation ideology* for the Chinese or immigrant descendants group because the state expects a linguistic and cultural assimilation into the mainstream society.

Different policies about language/s usage for indigenous groups *(pluralist ideology)* and immigrant descendants group *(assimilation ideology)* in multicultural Indonesia may have influence on the language usage differences between ethnic groups. Given the differences in acculturation contexts as explained above, the language usage may differ in each context and language may relate to the psychological outcomes differently between groups. In four studies, we look at the similarities and differences between groups but also the relation between language and psychological outcomes. The samples include three indigenous ethnic groups and one group of descendants of immigrants in Indonesia. The indigenous groups are Javanese as the dominant and biggest ethnic group and two smaller groups: Batak and Toraja. The group of descendants of immigrants are the Chinese. Due to political policy, Chinese are still considered descendants of immigrants; it is written in their identity cards until today regardless of the long history of Chinese settlement in Indonesia. All other ethnic groups are regarded as native/indigenous groups (Budiman, 2013; Oetomo, 1988; Suryadinata et al., 2003). *Assimilation ideology* is applied towards the Chinese in Indonesia and *pluralist* ideology is applied towards Javanese, Batak, and Toraja.

Toraja are a group regarded as an indigenous and ethnic group that is strongly oriented towards culture maintenance (Adams, 2006; Budiman, 2013; Panggara, 2015). It is interesting to examine whether Toraja, as a minority group, are different from or similar to the Chinese, because Toraja may have maintained their ethnic language and culture more than Chinese (Adams, 2006; Budiman, 2013; Suryadinata et al., 2003), as also they are subject to different policies of the state. Batak are also a minority indigenous descendant group, living in North Sumatra. It is important to investigate whether different contexts in different islands are also accompanied by differences in bilingualism and how this bilingualism relates to ethnic identity. Ethnic identity, according to Rotheram and Phinney (1987, p. 13), refers to "one's sense of belonging to an ethnic group and the part of one's thinking, perceptions, feelings, and behaviour due to group membership".

The questions on the differences and similarities on language usage/skill and its relation to psychological outcomes between groups due to different Indonesian contexts above are addressed in four studies. The results are reported in the next chapters. Some parts in this chapter will come back in the later chapters as they were developed as stand-alone texts that were published in peer-reviewed journals. This first chapter provides an overview of the main theoretical background on the topic of the whole project which comprises bilingualism, cultural maintenance behaviour, well-being, sociocultural adjustment, and ethnic identity among diverse ethnic groups in Indonesia, adopting concepts of acculturation models from cross-cultural psychology. The aim of this chapter is to present recent studies relevant to the topic as an overview which leads to the empirical studies

presented in various chapters in this dissertation. How adolescents' ethnic identity, well-being and bilingualism are developed, and how the parents influence the development of ethnic identity, well-being and bilingualism among adolescence in different contexts are discussed in the remainder. However, as all studies involve adolescents, I start by describing what adolescence means and why adolescents are chosen as the focus groups in this project.

## ADOLESCENCE

Adolescence is difficult to define in precise terms for several reasons. The term adolescence is commonly understood to define the period of life between childhood and adulthood (Kaplan, 2004, p. 1). This time frame, however, describes a very diverse reality, since adolescence varies considerably across cultures, time, and individuals. The transitional period as described by Kaplan (2004) varies by society. The physical onset of puberty is also not the same for all adolescents and can vary from 8 to 20 years (Thomas, Renaud, Benefice, De Meeus, & Guedan, 2001). Thus the physical experiences of these individuals will vary greatly, as will their social experiences. There are also cultural differences for how society perceives adolescents and how adolescents perceive themselves (e.g., Ferron, 1997). Body image may find its origin on an individual level, in the particularities of the family and parental language about the body, and on a collective level in the social representation of the body (Ferron, 1997).

Some researchers adopt the World Health Organization definition of adolescence as the period between 12 to 24 years of age (e.g., Butow, Palmer, Pai, Goodenough, Luckett, & King, 2010). The United Nations defines adolescents as individuals aged 10–19, that is, those in the second decade of their lives (DCI, 2005). According to *Departemen Kesehatan Indonesia* (Ministry of Health Republic of Indonesia), the definition of Indonesian adolescents regarding psychosocial development refers to individuals who are 15-24 years old and not married (Depkes, 2006), but regarding physical development, the age of Indonesian adolescents ranges from 10 years old until 19 years old (Depkes, 2001). However, the definition of adolescence based on psychosocial development of Ministry of Health Republic of Indonesia which includes marital status and social values of being independent adult in Indonesia, would be very different between ethnic groups in Indonesia and difficult to operationalize. For instance, in Indonesia, a 17 year old girl in a village might be married but is financially supported by the family and still lives with her family, and another 17 year old girl, who already left her parents for studying in another city through a scholarship program, is financially independent and single. Different ethnic groups would probably answer the question whether these girls are adolescents differently. Therefore, defining the age range of adolescence based on physical development is more broadly accepted than the age range based on psychosocial development. Because this research will be conducted in Indonesia, it is needed to consider the age range of physical development of adolescents according to the Ministry of Health Republic of Indonesia (10-19 years old), the World Health Organization (12-24 years old), and the United Nations (10-19 years old), and the common range is between 12-19 years old. This latter is the age range of adolescents who will participate in this study.

Developing a sense of identity is an important development task for adolescents (Smith, Walker, Fields, Brookins & Seay, 1999). There are critical relationships between identity, self-esteem and

psychological outcomes, such as achievement motivation, feeling of control (Rosenberg, 1985) and well-being (Heim, Hunter, & Jones, 2011). One identity component that is especially important for adolescents in multicultural contexts is ethnic identity (Marcia, 1966, 1980; Sabatier, 2008). Ethnic identity and self-esteem relate to how adolescents perceive their ability to achieve academically and professionally and espouse values of goal attainment in culturally diverse environments (Smith et al., 1999). Numerous studies focus on the ethnic identity of adolescents (e.g., Phinney, Romero, Nava, & Huang, 2001; Rotheram & Phinney, 1987; Smith et al., 1999), but there is still a paucity of knowledge on how language usage, particularly bilingualism, may relate to ethnic identity and well-being among indigenous minority adolescents. These are critical issues for adolescents, particularly in a bilingual and multicultural context such as multicultural Indonesia.

Adolescents who live in a multicultural/multilingual context such as Indonesia have to deal with many challenges. They have to deal with differences between the cultures that present these adolescents with many choices in areas of cultural practices, language use, and friendship. They also have to cope with both their ethnic culture and one or more cultures in their surroundings and it can be challenging to achieve a good sociocultural adaptation (Berry, 1997; Ferguson, Borstein, & Pottinger, 2012; Phinney et al., 2001). Adolescents grow up with parents who carry with them the language, values, and customs from their heritage culture, and on the other hand they have to interact with peers both from their own ethnic group and from other cultures. In multicultural Indonesia, most adolescents are bilinguals and they have to deal with friends from the same ethnic group and friends from other ethnic groups who speak different ethnic languages and have different habits.

## BILINGUALISM AMONG ADOLESCENTS IN A MULTICULTURAL CONTEXT

Speaking two languages not only shows a positive relation with well-being (Han, 2009; Han & Huang, 2010) and academic achievement (Cummins 1977; Peal & Lambert 1962), but also with ethnic identity (Mouw & Xie, 1999). Mouw and Xie (1999) argue that the language patterns used within the household are linked to ethnic identity. Their argumentation is supported by the finding of Rumbaut's (1994) study on the ethnic identity of immigrant children in southern California and south Florida, which shows that children who preferred to speak English were significantly more likely to identify themselves as "unhyphenated" Americans. Because of this close connection between language and ethnic identity, bilingualism may reflect delayed linguistic assimilation but could also be an indicator of the maintenance of ethnicity in an immigration context (Mouw & Xie, 1999). However, bilingualism in an indigenous (non-immigration) context may not reflect this delayed linguistic assimilation, especially in the context where two languages historically coexist such as in Indonesia.

Cross-cultural research on bilingualism has shown that bilingual children have better access to the ethnic and cultural capital of their parents than children who are monolingual (Bankston & Zhou 1995; Mouw & Xie, 1999). Mouw and Xie (1999) have advanced the alternative thesis that bilingualism is important in a transitional sense because it enables immigrant children to communicate

effectively with parents who are not proficient in the dominant language. They claimed that bilingualism is beneficial for academic achievement only because it prevents a language gap from emerging between parents and children. According to Mouw and Xie (1999), delaying linguistic assimilation is important because it ensures effective communication between parents and children; however, the academic benefits of maintaining bilingual proficiency are transitional and gradually diminish if the parents develop dominant-language proficiency.

Research on cognitive outcomes of bilingualism proposes that fluent bilingual speakers have an advantage because they have two codes for every concept, which leads to greater cognitive flexibility and better abstract reasoning powers (Mouw & Xie, 1999). Bilingualism is beneficial to cognitive development, such as academic achievement and mental flexibility, because it allows bilingual children to switch easily between two linguistic mediums (Cummins 1977; Mouw & Xie, 1999; Peal & Lambert, 1962). Related to this cognitive and language development, some studies explain that there are two patterns of bilingualism, additive and subtractive bilingualism, that have different effects on ethnicity and well-being. Additive bilingualism is a bilingual fluency which appears when a second, socially relevant language is added to individual's linguistic repertoire (Wright et al., 2000), and the inclusion of the second language does not reduce or disrupt, and even may enhance proficiency in the heritage language (Genesee, 1987; Wright et al., 2000). For example, Wright, Taylor, and Macarthur (2000) have studied bilingualism among Inuit children in one of the larger communities in Nunavik. They observed that Inuit realize that fluency in a mainstream language (English or French or both) is an important key to future opportunities and success even in Nunavik; however, for most Inuit the maintenance of their heritage language is a non-negotiable necessity. The Inuit children's fluency in a second language can and must be acquired without replacing heritage-language competencies.

The learning of the second language leads to subtractive bilingualism, and not additive bilingualism, when the heritage language is gradually replaced by a more prestigious or powerful second language (Lambert, 1977; Lambert & Taylor, 1983; Taylor, Meynard, & Rheault, 1977; Wright et al., 2000). The subtractive form of bilingualism is demonstrated when an increasing acquisition of the dominant language corresponds with a slowing or even reversing of development in the heritage language (Lambert & Taylor, 1983; Wong Fillmore, 1991; Wright et al., 2000). When the difference in the social status, institutional dominance, and numerical superiority between the two languages is greater, the subtractive power of the dominant language will be greater, too (Wright et al., 2000). Subtractive bilingualism can be found in any group, whether native people, immigrant, or minority-language groups (Hakuta, 1987; McLaughlin,1985; Wright et al., 2000). Moreover, bilingualism experiences can also differ across cultures (Ramírez & García, 2014), and thus bilingualism experiences might differ among different ethnic groups within Indonesia where this project is conducted and where almost all ethnic groups are bilinguals.

Therefore, classification of bilingualism into additive and subtractive bilingualism may not be applicable to Indonesia. In the Indonesian context, Bahasa Indonesia as the lingua franca is the powerful second language for almost all ethnic groups that may or may not become the dominant language. Especially among Chinese, who experienced political restrictions in using their ethnic language for decades in the past, Bahasa Indonesia may take over the ethnic language.

Chinese acquired their ethnic language less and less (Suryadinata et al., 2003). This change could be due to political restrictions (imposed by the powerful government) and the very small number of Chinese. The consequence was that Bahasa Indonesia became the dominant language of Chinese-Indonesians (Wright et al., 2000). Hence, the classification of additive and subtractive bilingualism cannot comprehensively explain bilingualism in the Indonesian context, whose socio-historical circumstances are very different from immigration contexts. The scientific contribution of this project is the novel information about various bilingualism patterns in non-Western and non-immigration multicultural context, especially among adolescents, and about how bilingualism relates to identity, sociocultural adjustment, and well-being among different ethnic groups.

## INDONESIA AS A UNIQUE CONTEXT OF BILINGUALISM

Indonesia is a multicultural country with more than 300 native languages and diverse ethnicities that are joined in one nation. A core statement in the national ideology of Indonesia is "Bhineka tunggal ika", which means "unity in diversity" (Nababan, 1985). The statement implies that all ethnic groups are expected to maintain their own cultures and languages, but also to develop a strong national identity and to learn the national language (Nababan, 1985; Suryadinata et al., 2003). Almost everyone in Indonesia speaks at least two languages and deals with dominant versus non-dominant culture issues. All Indonesians have to deal with multiple languages, cultures, and physical differences (for example, people from Papua have dark skin, people from Manado have lighter skin, and Javanese are darker than Manado but lighter than Papuan). Although almost all Indonesians are bilinguals and have to deal with cultural differences, no study about how bilingualism relates to psychological outcomes such as well-being, social identity, and adjustment has been conducted in Indonesia. Most studies about psychological outcomes related to bilingualism are conducted in immigration countries where the host is the majority and the immigrant group is the minority.

There were very few early studies on bilingualism and acculturation conducted in Indonesia and those few studies usually were not related to psychological outcomes (e.g., Barlett, 1952; Nababan, 1985). More recently, a study was done by Marlina (2016), but this study used only two cases. The author concluded that the educational system could strengthen bilingualism so that an individual would become equally competent in both languages if an individual was a simultaneous bilingual and was supported by their education and society. A study on bilingualism by Kurniasih (2006) in Jogjakarta (Java) studied bilingualism in Javanese children. She studied the patterns of language use among school age children (11 and 14 year-olds) at home and at school, and the language that the parents used to talk to the children and to other interlocutors. The middle class parents and children used Bahasa Indonesia much more than the working class counterparts, and female children spoke Bahasa Indonesia more than male children (Kurniasih, 2006). Since 1994, the Javanese language simply became a 'local' subject in schools in Central Java that was taught for two teaching hours per week. This means that it was no longer obligatory to provide ethnic language courses and the local schools can decide whether they will teach the subject or not. The number of speakers who speak Javanese as the first language declined ever since (Musgrave, 2011). Although there were some studies about bilingualism in Indonesia, there is still a lack of knowledge how bilingualism in Indonesia may relate to psychological outcomes.

Compared to Indonesia, previous studies conducted in Western countries took very different contextual backgrounds into consideration. In many Western contexts, the major dominant culture is usually the host culture. In Indonesia, the national language is not the language of the biggest and most dominant group, which is Javanese (Suryadinata et al., 2003). It is common in Indonesia that in a certain area, the native ethnic language is the main language in daily conversation or private life (such as Toraja in South Sulawesi and Javanese in Central Java), and the national Indonesian language (Bahasa Indonesia) is used in workplaces and schools (Ananta, Arifin, Hasbullah, Handayani, & Pramono, 2013). There are hundreds of minority ethnic groups in Indonesia; all speak ethnic languages and have to acquire the second language (Bahasa Indonesia), which is the national lingua franca. In this unique context, new information will be gained on the role of bilingualism in developing ethnic identity and its influence on sociocultural adjustment and well-being in the context where the first and second language coexist.

Javanese are the dominant and largest ethnic group in Indonesia (around 40% of the total Indonesian population). Most of the Indonesian population lives in Java (around 60%), predominantly in Central and East Java where around 70% of the population is Javanese (Suryadinata et al., 2003). Below is the description about the largest group (Javanese) and the minority groups (Batak, Chinese, and Toraja) which are included in the study.

## Ethnic groups in the study

Besides Javanese, there are other smaller ethnic groups in Java such as Sundanese (West Java), Betawi (Jakarta), Madura (East Java), Banten (West Java), Cirebon (West Java), and Chinese. Javanese and Chinese in Java are sampled in this study. Most Javanese live in Central Java and East Java (Suryadinata et al., 2003). Chinese are regarded as descendants of migrants (only around 1% in the whole country) and in the past they were prohibited from speaking their own ethnic language during the Soeharto regime who reigned from 1967 until 1998 (Gunawan, 2007; Suryadinata et al., 2003).

North Sumatra is home to the Batak ethnic group (which makes up 3.2% of the Indonesian total population, Suryadinata et al., 2003). They interact extensively with the Javanese, who have migrated to North Sumatra (32% of the local population), and Chinese (20% of the local population). As the Batak group is smaller in number and the Batak language is less dominant compared to the Javanese language in Java, the Batak have to speak Bahasa Indonesia in their daily life in North Sumatra more than the Javanese do in Java, whose language is dominant in Central Java (Gunawan, 2007; Suryadinata et al., 2003). Batak in North Sumatra speak Bahasa Indonesia not only during official occasions but also in daily conversations in communication with other ethnic groups, and speak Batak when interacting with their own ethnic group. In the local population in North Sumatra area, Batak constitute 42% of the local population (Suryadinata et al., 2003).

Like Chinese and Batak, Toraja is also a minority group (only 0.37% of the Indonesian population) but regarded as a native group in Indonesia. They mainly live in area of Tana Toraja, South Sulawesi (Suryadinata et al., 2003), and they are very famous for their unique well maintained ethnic culture and rituals, such as *Rambu Solo,* which strongly relates to Toraja's social identity and is a placeholder

for other traditions (Adams, 2006; Budiman, 2013; Panggara, 2015). Because of its importance for the social identity of Toraja, it is important to understand *Rambu Solo*.

*Rambu Solo* is an ancient tradition related to belief on death which is very important in the Toraja social system until now and has become an important factor for Toraja's social identity (Adams, 2006; Budiman, 2013; Panggara, 2015). When a person dies in Tana Toraja, a first ceremony (*dipalambi'i*) is held in the *tongkonan* house (traditional house) just after death. After months or even years after the person has died, the second and bigger ceremony called *Rambu Solo* is held (Adams, 2006; Budiman, 2013; Panggara, 2015). The body of the dead is kept in the house until *Rambu Solo* can be conducted. The dead body is embalmed but is considered as only being sick or weak and is still given food and drink. The family even has to talk to the deceased as if the deceased is still alive, until they can afford a proper *Rambu Solo*. *Rambu Solo* is a delivery of the soul of the deceased so that it can reach the level of gods (*membali puang*) or become a deity (*deata*). *Rambu Solo* is a customary ritual aimed to respect the spirit and to deliver the deceased to the place of their ancestors called *Puyo* (Adams, 2006; Budiman, 2013). *Rambu Solo* is a very important ceremony, because the ceremony determines the position of the spirit of the person who dies (Adams, 2006; Budiman, 2013). The ceremony reflects the importance of social strata maintenance and the relationship within the family and with the ancestors (Adams, 2006; Budiman, 2013; Panggara, 2015). People of Tana Toraja spend substantial amounts of time and money on the ceremony (*Rambu Solo*) which includes rituals that can take days or weeks for their loved ones. Related to the ceremony, there are various cultural activities which are open to the public, such as the buffalos meant to be sacrificed are put in a buffalos fight (before the buffalos are slaughtered), feet fighting rituals (people fight with their legs or feet), dancing and singing rituals to express sadness, enwrapping and bringing the corpse to the grave. The main event is the slaughtering of buffalos. The number of buffalos the family provides for the ceremony shows the social status of the family (Adams, 2006; Budiman, 2013). The higher the social status of the person who dies, the more animals are sacrificed during *Rambu Solo* and the bigger the celebration (Adams, 2006; Budiman, 2013). For instance, a person with middle social status has only to sacrifice eight buffalos or fifty pigs, but a noble has to sacrifice at least twenty or up to a hundred buffalos, including a mud white buffalo (Bubalus bubalis/*Tedong Bonga*) which costs thousands of dollars and is a species that is only found in Toraja (Adams, 2006; Budiman, 2013).

Considering the well maintained culture in Toraja, the question that may come up is whether Toraja are different from or similar to Chinese in bilingualism and ethnic identity, because although both are non-dominant groups, Toraja have maintained their ethnic language and culture much more than the Chinese, and Chinese are still regarded as immigrant descendants (Adams, 2006; Budiman, 2013; Panggara, 2015; Suryadinata et al., 2003). Also in some ways, Toraja share similarities with the Javanese dominant group in maintaining the language and culture. However, regarding language usage, the Javanese language is more broadly used than the Toraja language which is used only in the much smaller restricted area in Toraja, Sulawesi. Moreover, Batak and Toraja are both regarded as native minorities, but they have different ways of maintaining their culture and live in a different social context on different islands. How do these differences in ethnic language usage and social context of different islands influence the relationship between bilingualism and ethnic

identity, sociocultural adjustment, and well-being? These questions are investigated in this project in a context where national and ethnic culture are highly integrated, both languages coexist, and most people are competent in both mainstream national language/culture and ethnic language/culture (see Benet-Martínez, 2002, 2006).

## ADOLESCENTS' ETHNIC IDENTITY, ADJUSTMENT, AND WELL-BEING IN MULTICULTURAL INDONESIA

How the language functions for dealing with own group and other groups among adolescents in a non-immigrant but multicultural context is still understudied. We do not know much how language usage among adolescents from different indigenous groups in multicultural context may also relate to their psychological outcomes. It has been found that among adolescents across three immigrant groups (i.e., Armenian, Vietnamese, and Mexican in the US), ethnic language proficiency and social interaction with peers from one's own ethnic group are related to ethnic identity (Phinney et al., 2001). The number of occasions when adolescents with immigrant backgrounds speak their ethnic language and interact with peers from their own group is likely related to their ethnic identity (Phinney et al., 2001). The function of language is especially important in relation to ethnic identity, since it refers to a criterion for distinguishing between in-group and out-group (Vedder & Virta, 2005). There are, however, other questions which are needed to be answered, such as how language relates to ethnic identity, social adjustment, and well-being among adolescents in non-immigrant context such as Indonesia, and whether the relations are similar to the relations which are found in a multicultural immigrant context.

The Indonesian context is different from immigration contexts, such that due to the multicultural composition of the society, intercultural interactions and adjustment to various practices, norms, and customs are similarly experienced by all members of society and inter-group contact is not reserved for immigrants. In its original definition from the 1930s, acculturation refers to prolonged contact between cultures (Berry, 2006). It is exactly this pattern of intercultural exchange and ensuing changes that is addressed in this thesis. Contact between groups is structurally common in Indonesia. This communication between sedentary groups shares some comparability to the situation of indigenous people in North and South America who did not migrate to another geographical context but came into contact with Europeans because those groups had moved (Berry, 2006; Padilla, 2006).

In the Indonesian context, almost all ethnic groups are exposed to other cultures and languages, and specifically adolescents learn the national language and interact with other ethnic cultures using the national language while maintaining their interaction within their ethnic group using their ethnic language. What is specific for the study and possibly the Indonesian context in general is the strong positive relation between ethnic and national culture. Typically, knowledge of ethnic and of mainstream cultures are weakly related in immigration contexts (e.g., Ward & Geeraert, 2016; Ward & Kennedy, 1996).

We have a very different situation in the context of the study of this thesis. Sociocultural adjustment consists of adjustment to (to be able to 'fit in') their own culture (e.g., ethnic language

usage, social interaction with the peer from same ethnic group, ethnic event/celebration – such as *Rambu Solo* in Toraja, or *Grebegan* in Javanese culture, or *Imlek* in Chinese culture) and to the national culture (e.g., Bahasa Indonesia usage, social interaction with people from other ethnic groups, national event/celebration – such as Indonesian independence celebration). In Indonesia, these two 'ethnic' and 'national' cultures are indeed related to each other, and therefore we put it in the proposed model with sociocultural adjustment as 'one factor' (different from the immigration context, where it is usually separated as two different factors of sociocultural adjustment among immigrants).

Studies about ethnic identity among bilingual adolescents have been conducted mainly in Western, immigrant contexts (see, e.g., Phinney, Romero, Nava & Huang, 2001; Rotheram & Phinney, 1987; Smith et al., 1999). There is evidence from these studies that familial ethnic socialization, which is mainly influenced by parents, plays a significant role in the process of ethnic identity formation for all adolescents, regardless of ethnic background (Umana-Taylor, Bhanot, & Shin, 2006). The language pattern within a household is linked to ethnic identity (Mouw & Xie, 1999). Furthermore, ethnic identity and self-esteem relate to how adolescents perceive their ability to achieve academically and professionally and espouse values of goal attainment (Smith et al., 1999), and ethnic identity is especially important to be developed in adolescents who live in a multicultural context. International research on ethnic identity has indicated that minority groups tend to have a stronger sense of ethnic identity than members of the dominant sociopolitical group (De Roza & Ward, 1999; James, Kim, & Armijo, 2000). For example, in the US where racial groups are salient markers of ethnicity, Phinney (1992) reported that African, Asian, and Hispanic Americans in the US have a stronger ethnic identity than Whites. Some other studies have shown that ethnic identity mediates the effect of experienced racism in daily life on psychological health and positive psychological well-being (e.g., Heim et al., 2011; Mossakowski, 2003), and ethnic identification is associated with a lower level of perceived stress and more positive well-being (Heim et al., 2011). Much less is known how ethnic identification of indigenous minority groups in Indonesia relates to their well-being.

Subjective well-being consists of the experience of utility and a global evaluation of life (Kahneman, 1999). How a person evaluates his/her life satisfaction involves a reflective analysis of his/her life, reports of experiences and comprises his/her positive and negative momentary feeling (Diener, Ng, Harter, & Arora, 2010). Life satisfaction, pleasant emotions, and unpleasant emotions form distinct aspects of subjective well-being (Lucas, Diener, & Suh, 1996). Income is a moderately strong predictor of life evaluation but a much weaker predictor of positive and negative feelings; these feelings are most associated with the fulfilment of psychological needs: learning, autonomy, using one's skills, respect, and the ability to count on others in an emergency (Diener et al., 2010). Previous studies also show that religion relates positively to family orientation and higher life satisfaction among adolescents, and the relation is stronger in cultures with a high overall religiosity such as Indonesia (Sabatier, Mayer, Friedlmeier, Lubiewska, & Trommsdorff, 2011). Among minority groups, identification with one's own ethnic group is positively associated with psychological well-being (Heim et al., 2011), and bilingualism relates positively to social well-being (Han, 2009).

Although early researchers in 1920s believed that bilingualism (ability to speak two languages) hindered children's cognitive development and academic achievement (e.g., Saer, 1922, 1923), later evidence showed that bilingualism was positively related to self-esteem, ability to socialize in diverse settings, leadership abilities, peer competence, and subjective well-being (e.g., Birman, 1998; Szapocznik, et al., 1980; see also Baker, 2011). Later studies also showed that bicultural individuals do not necessarily experience linguistic confusion and identity conflict, and involvement or contact with two cultures can be beneficial as long as bicultural persons do not internalize the (potential) conflict between the two intersecting cultures (e.g., Benet-Martínez & Haritatos, 2005; Padilla, 1994; Phinney & Devich-Navarro, 1997). An individual with a high bicultural identity integration will have a linguistic fluency in mainstream language/culture but is also competent in its ethnic language/culture (Benet-Martínez, 2002, 2006). This integration of both mainstream and ethnic culture can be found among Indonesians since both national and ethnic identity are important, as it is reflected in the ideology of the country, *Bhineka tunggal ika*, which means that the differences among ethnic groups are acknowledged as a cultural richness of being one nation (Latuconsina & Rafidi, 1996, Nababan, 1985). However, very few studies on how bilingual usage and ability relate to well-being of adolescents have been conducted in Indonesia until now.

## THE NOVELTY AND CONTRIBUTION OF THIS STUDY

Many researchers are interested in studying topics related to acculturation and multiculturalism; yet only around 12% of the research focus on youth and adolescence - and most of this research is conducted in Western, educated, industrialized, rich, democratic (WEIRD) societies (Celenk & van de Vijver, 2011; Henrich et al., 2010). Furthermore, although many studies about ethnic identity among adolescents have been conducted in Western countries, only a very small number of them are from Eastern countries (e.g., Meeus, 2011). This study contributes to the literature on ethnic identity among adolescents in Indonesia.

There are some studies on the development of ethnic identity among adolescents and how parents can contribute to the ethnic identity development in different context (e.g., Supple, Ghazarian, Frabutt, Plunkett, & Sands, 2006; Umaña-Taylor & Guimond, 2010). The contribution of this research to the scientific literature relates to how bilingualism patterns can be explained in different contexts, and how bilingualism relates to ethnic identity, well-being, and sociocultural adjustment among adolescents also in non-Western and non-immigration multicultural context. By providing the information, we would be able to understand how the relation between bilingualism with ethnic identity, well-being, and sociocultural adjustment may in some ways be similar to a western or immigration context, and in other ways may differ from a western or immigration context. Moreover, there is some research on how parents influence the development of ethnic identity and how ethnic identity relates to positive psychological outcomes (e.g., Phinney et al., 2001; Smith et al., 1999), but whether ethnic identity is a mediator between parental culture maintenance behaviour and well-being is not yet clear. This study aims to contribute to a clearer understanding of the relation between parental culture maintenance behaviour and well-being, and the possible mediation by ethnic identity. Another novel aspect of this study is that the question

whether those variables relate to each other similarly or differently across diverse ethnic groups in Indonesia is addressed. The classification of additive and subtractive bilingualism is only one of the many societal components of bilingualism and it cannot comprehensively explain bilingualism in all contexts, such as non-Western or other than immigration contexts (e.g., Lambert, 1977; Lambert & Taylor, 1983; Taylor, Meynard, & Rheault, 1977; Wright et al., 2000).

The last and most important contribution is that this study provides a model that explains how bilingualism relates to adolescents' ethnic identity, well-being, and sociocultural adjustment. By knowing which part in the relation between bilingualism and psychological outcomes is culturally specific, researchers can arrive at better designs in order to study the relation between different dimensions of bilingualism and psychological outcomes in different cultures. The relation between domains in bilingualism and the relation between each domain with psychological outcomes may show cultural specificity, and the manifestation of bilingualism in usage and skill may relate to context or in other words, bilingualism is contextualized. Thus, I investigate whether relations between parental cultural maintenance behaviour, adolescents' bilingualism, identity, and well-being vary among different minority groups in Indonesia.

## THESIS OUTLINE

This thesis consists of four studies investigating how bilingual skills and language usage vary depending on the context (contextualized bilingualism), and beyond these potential differences, how bilingualism relates to identity, adjustment, and well-being of adolescents across ethnic groups, and how parents play a role in developing bilingualism and ethnic identity (the conceptual model can be seen in Figure 1). Referring to the above theories, it is expected that parental culture maintenance behaviour has direct and indirect effects on well-being through ethnic identity and through language (Dimitrova et al., 2013, 2014; Downie, Chua, Koestner, Barrios, Rip, & M'Birkou, 2007; Han, 2009; Phinney et al., 2001; Rotheram & Phinney, 1987; Smith et al., 1999), language ability may mediate the relation between language usage and sociocultural adjustment (Downie et al., 2007; Jia, Aaronson, & Wu, 2002; Mustafa & Ilias, 2013; Park et al., 2012; Ward & Kennedy, 1993); the relation between national (Bahasa Indonesia)/ethnic language usage and sociocultural adjustment is mediated by Bahasa Indonesia/ethnic language vocabulary. Data on parental culture maintenance behaviour was gathered from parents, and data on identity, language usage and skill, adjustment and well-being were gathered from adolescents. In the proposed model of this thesis, bilingualism (in a broad sense) comprises language usage at home, language usage in public, and language skill.

The *first study* (Chapter 2) is about how parental cultural maintenance behaviour relates to well-being of adolescents through ethnic identity and language usage across groups, how both ethnic language usage and national language usage, both national identity and ethnic identity relate to well-being across groups. In studies two, three, and four, I address the question whether bilingualism is similar or different across groups, how and why it is similar or different between groups, how bilingualism of adolescents in a non-immigration and non-Western context relates to adolescents' adjustment, whether both national language and ethnic language are important for adjustment and well-being, or if one language matters more than the other for adjustment

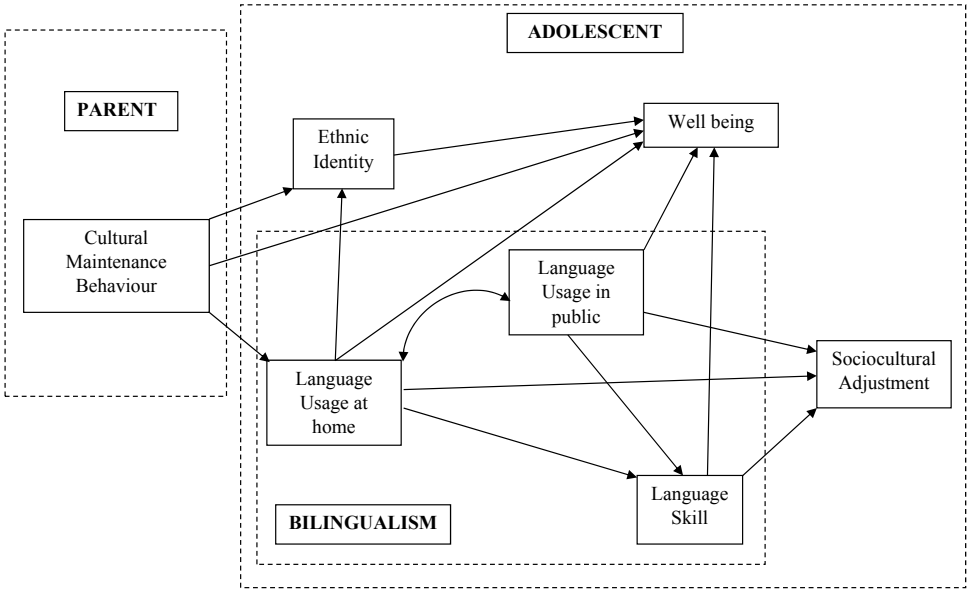


**Figure 1. Conceptual model**

and well-being, whether different contexts in different islands also reflect differences in language usage and ability, and in which conditions language ability and language usage can be similar or different between groups will be investigated. This first study focuses on the role parental cultural maintenance behaviour plays in bilingualism, ethnic identity, and well-being of adolescents and whether the correlations between parental cultural maintenance behaviour and bilingualism, ethnic identity and well-being are the same across groups. There are two parts in this study; the first part addresses a proposed model of the relationships between parental culture maintenance behaviour, usage of the ethnic language and Bahasa, identity, and well-being. The second part of the study is about cultural group differences on how much Bahasa Indonesia and ethnic language are used, and how these differences are related to ethnic identity and national identity.

The *second study* (chapter 3) examines how bilingualism relates to sociocultural adjustment, with a proposed mediation model that specifies how the vocabulary of each language mediates the relation between language usage and sociocultural adjustment (national and ethnic).

The *third study* (chapter 4) investigates similarities and differences between three ethnic groups in Indonesia on the skill and usage of the lingua franca and ethnic/heritage language, and how bilingualism is associated with subjective well-being and sociocultural adjustment across groups.

The *fourth study* (chapter 5) discusses the patterns of bilingualism comprising language vocabulary, subjective fluency, language usage at home, and language usage in public among four different ethnic groups in Indonesia. This study also discusses potential domain specificity in the ethnic and national language by addressing items bias of the language vocabulary measure in both languages (Bahasa Indonesia and four ethnic languages). From these discussions on

bilingualism patterns, and whether there are cross-cultural effects on items bias of the language vocabulary measure, we get an understanding how bilingualism may differ because of the different context and how bilingualism is contextualized in different domains.

In chapter six, a discussion is presented that integrates the four studies. I provide answers to the research questions of the thesis; more specifically, I discuss whether bilingualism in a non-immigration multicultural context like Indonesia is different from or similar to bilingualism in an immigration context and how bilingualism in Indonesia differs from the immigration context or is similar to an immigration context, how and why bilingualism in Indonesia differs or is similar across ethnic groups in Indonesia, and how and why language usage and language ability of both national and ethnic language are important for identity, sociocultural adjustment, and well-being among non-immigrant groups who live in multicultural and multilingual country although there are variations in the language usage pattern and bilingualism ability. In this chapter, conclusions on how parental culture maintenance behaviour relates to bilingualism, ethnic/national identity, and well-being, and how bilingualism relates to ethnic/national identity, well-being, and sociocultural adjustment are drawn from the four studies (see the conceptual model presented in Figure 1).

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# CHAPTER 2

## PARENTAL CULTURE MAINTENANCE, BILINGUALISM, IDENTITY AND WELL-BEING IN JAVANESE, BATAK, AND CHINESE ADOLESCENTS IN INDONESIA

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## ABSTRACT

We examined the importance of parental culture maintenance behaviour, bilingualism, ethnic identity, and national identity for well-being of adolescents in multicultural Indonesia. We tested a mediation model in which the link between (perceived) parental culture maintenance behaviour and well-being is mediated through speaking Bahasa at home and national identity on the one hand and speaking the ethnic language at home and ethnic identity on the other hand. Participants were 448 adolescents (261 females) from four Indonesian ethnic groups (Chinese from Java, Chinese from North Sumatra, Batak, and Javanese), aged between 12 and 19 years ($M_{age}$ = 15.92 years). We found support that parental culture maintenance was positively related to both ethnic and national identity, was correlated to the usage of ethnic language at home, but not correlated to the usage of Bahasa Indonesia at home; language usage was not associated with identity; there was no link between parental culture maintenance behaviour and usage of languages at home with well-being, but both national and ethnic identity were positively associated with children's well-being across groups. We conclude that parental culture maintenance, ethnic identity, and national identity are important for well-being of these Indonesian adolescents, whereas speaking the language is independent from well-being and ethnic identity.

Keywords: adolescents, bilingualism, culture maintenance, identity, well-being.

# PARENTAL CULTURE MAINTENANCE, BILINGUALISM, IDENTITY AND WELL-BEING IN JAVANESE, BATAK, AND CHINESE ADOLESCENTS IN INDONESIA

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Developing a sense of identity is an important developmental task for adolescents (Smith, Walker, Fields, Brookins, & Seay, 1999). Research has established that there are critical relationships between identity and self-esteem, as well as self-esteem and various psychological outcomes such as feeling of control (Rosenberg, 1985) and well-being (Heim, Hunter, & Jones, 2011). One identity component that is especially important for adolescents in multicultural contexts is ethnic identity. While numerous studies focus on ethnic identity (e.g., Phinney, Romero, Nava, & Huang, 2001; Rotheram & Phinney, 1987; Smith et al., 1999), there is still a paucity of knowledge on how language, particularly bilingualism, may be involved in the relation between ethnic identity and well-being in bilingual and multicultural context such as Indonesia. A U.S. study suggests that competence in the mainstream culture, including speaking the language, may play a major role in the development of a bicultural identity (Benet-Martinez & Haritatos, 2005). Related to ethnic identity, language is an important signifier of belonging and a criterion for distinguishing between in-group and out-group (Vedder & Virta, 2005). In the Indonesian context, bilingualism is ubiquitous, has been maintained across generations, and is not challenged by national language assimilation policies like those in France and Germany (Yağmur & Van de Vijver, 2012). There are indications that the salience of ethnic language in everyday life differs across ethnic groups in Indonesia (Suryadinata, Arifin, & Ananta, 2003), but little is known about how these differences are related to differences in well-being and identity.

## IDENTITY, LANGUAGE, AND WELL-BEING

Identity and language tend to be closely linked (Choi, 2015; Le Page, 1972; Phinney et al., 2001). In multicultural nations, language not only demarcates membership of an ethnic group but also signifies bonds across ethnic lines and enhances a sense of ethnic and national identity, because language enables a person to be ethnically rooted and yet to reach out communicatively at a national level (Das Gupta, 1968). National identity refers to one's feelings of commitment and belonging to the country of residence or host country (Phinney & Devich-Navarro, 1997), and ethnic identity refers to "one's sense of belonging to an ethnic group and the part of one's thinking, perceptions, feelings, and behaviour due to group membership" (Rotheram & Phinney, 1987, p. 13). Language is a critical factor in setting boundaries of an in-group, ranging from nation states to small local communities (Giles & Coupland, 1991). While there are non-linguistic boundaries, such as appearance and beliefs, language is often one of the most important markers of ethnic group membership. For instance, in the Indonesian context, ethnic Chinese living in North Sumatra often maintain proficiency in Chinese, even though they also speak Bahasa Indonesia and their lifestyle resembles the local majority in other aspects of everyday life (Gunawan, 2007).

Many individuals in diverse societies engage with and are shaped by more than one culture (Morris, Chiu, & Liu, 2015). The process of negotiating cultural influences can yield multiple identities (e.g., Ferguson, Bornstein, & Pottinger, 2012). Having strong multiple identities in

a multicultural context is associated with higher well-being (Ferguson et al., 2012; Ferguson & Adams, 2015). Numerous studies have addressed ethnic identity and its relevance for adolescent well-being (e.g., Dimitrova et al., 2013, 2014; Phinney et al., 2001; Rotheram & Phinney, 1987; Smith et al., 1999). Previous research has also found that ethnic identity is positively associated with bilingual language use in the family (Mouw & Xie, 1999) and that both ethnic identity and bilingualism relate positively to social well-being (Han, 2009).

## WELL-BEING

Studies in Western countries have shown that life satisfaction, pleasant emotions, and unpleasant emotions form distinct aspects of subjective well-being (Diener, Ng, Harter, & Arora, 2010; Lucas, Diener, & Suh, 1996). Life satisfaction judgments involve a reflective analysis of a person's life and reports of experience comprise a person's positive and negative momentary feeling over time (Diener et al., 2010). Life satisfaction, pleasant emotions, and unpleasant emotions form distinct factors of subjective well-being (Lucas et al., 1996). Both cognitive and affective aspects of subjective well-being were measured in this study.

Individuals who live in multicultural societies engage with and are shaped by more than one culture (Morris, Chiu, & Liu, 2015). The process of negotiating cultural influences can yield multiple identities (e.g., Ferguson, Bornstein, & Pottinger, 2012), and having strong multiple identities in a multicultural context is associated with higher well-being (Ferguson et al., 2012; Ferguson & Adams, 2015). Previous research has also found that both bicultural identity and bilingualism relate positively to well-being (Han, 2009; Hong, Morris, Chiu, & Benet-Martínez, 2000), and that language fluency among bilinguals relates positively to adjustment and negatively to acculturation stress among adults (Chen, Benet-Martínez, & Bond, 2008).

It has been found that among Latino youths, biculturalism was positively related to self-esteem, ability to socialize in diverse settings, leadership abilities, peer competence, and well-being (Birman, 1998; Szapocznik, Kurtines, & Fernandez, 1980). However, in Indonesia there are very few studies on biculturalism and how bilingualism relates to well-being of adolescents. A study among Javanese adolescents in East Java (Malang), for example, showed that better relationships with parents are associated with more well-being among adolescents (Nayana, 2013). It is also necessary to note that SES has been associated with subjective well-being (e.g., Diener, Harter, & Arora, 2010). Hence, we need to take into consideration the level of education of parents, which may correlate with the fulfilment of psychological needs of learning and using skills which, in turn, may correlate with subjective well-being.

Although it has been shown that Indonesian parents play a role in their children's well-being, it is unclear whether bilingualism and ethnic identity are related to well-being among Indonesian adolescents. This study will investigate the importance of bilingualism and ethnic identity for adolescents' well-being in Indonesia. It is expected that well-being is not only related to bilingualism and identity, but also to parental culture maintenance behaviour (Downie, Chua, Koestner, Barrios, Rip, & M'Birkou, 2007; Umana-Taylor, Bhanot, & Shin, 2006).

## PARENTAL CULTURE MAINTENANCE BEHAVIOUR

A study in the US, UK, Australia, and Canada showed that the way how parents give cultural guidelines for their children correlated positively with well-being and internalization of both host and ethnic culture among immigrants and sojourners, and that internalization of both cultures was also associated with well-being (Downie et al., 2007). A longitudinal study among young children with an average age of 5 years and from Chinese immigrant families in the US showed that a supportive family climate was positively related to ethnic language proficiency; parental cultural maintenance values appeared influential, parental behavioural support of ethnic language showed more robust prospective associations with children's ethnic language development (Park, Tsai, Liu, & Lau, 2012). Another study showed that ethnic language proficiency and the ability of immigrant parents and their children to communicate in a common language were associated with a higher family relationship quality (Tseng & Fuligni, 2000). The latter study also showed that immigrant adolescents whose dominant language is different from the dominant language of their parents reported less cohesion in their relationship and having fewer discussions with their mothers and fathers than did their peers who have the same dominant language with their parents (Tseng & Fuligni, 2000). Adolescents who used the native language with their parents the most reported the highest levels of cohesion and the most frequent discussions.

In a study by Phinney et al. (2001) in the US, parental maintenance behaviours had a significant positive effect on ethnic language proficiency. Ethnic language proficiency was related to ethnic identity among adolescents across Armenian, Vietnamese, and Mexican immigrant groups in the US. However, correlations between ethnic identity and parental culture maintenance behaviour and the mediational role of ethnic language on the link between parental culture maintenance behaviour and ethnic identity were not the same across groups (Phinney et al., 2001). Phinney et al.'s (2001) findings in the US show that among Armenians, parental culture maintenance behaviour had a direct effect on ethnic identity, whereas the direct effect was not found among Mexicans or Vietnamese. Significant correlations between all variables (parental culture maintenance behaviour, ethnic language, ethnic identity, and in-group peer interaction) were only found among Armenians, presumably because Armenian parents found it more important to send their children to ethnic schools and to maintain their ethnic culture than the other two groups, and because Armenian adolescents had more opportunity to speak their ethnic language with their peers than the other two groups. In the Indonesian context, however, both minority and majority native groups have the opportunity to speak their ethnic language with family and friends, and all of the groups can learn the ethnic languages in schools although Chinese immigrant descendants have less opportunity to use their ethnic language in daily life compared to the native groups (Javanese and Batak). Hence, the results of the present study are expected to be similar to the Armenian adolescents in the study by Phinney et al.'s (2001), that parental culture maintenance behaviour has direct effect on ethnic identity.

It has been shown that parental culture maintenance behaviour is associated with higher ethnic language proficiency and ethnic identity (Phinney et al., 2001), ethnic identity correlates positively with well-being (Dimitrova et al., 2013, 2014; Phinney et al., 2001; Rotheram & Phinney, 1987; Smith

et al., 1999), bilingualism relates positively to social well-being (Han, 2009), and parental behaviour is associated with well-being (Downie et al., 2007). Hence, we conclude that parental maintenance behaviour can have both a direct effect on well-being and an indirect effect through ethnic identity and language.

## INDONESIA AS A MULTICULTURAL AND MULTILINGUAL CONTEXT

Previous research among U.S. immigrants found that ethnic identity is linked to bilingual language use in the family (Mouw & Xie, 1999) and that bilingualism relates positively to social well-being (Han, 2009). However, to the best of our knowledge, the present study is the first to examine how parents' cultural maintenance behaviour, bilingualism at home, ethnic identity, and well-being relate to one another in a multicultural context in Asia, thereby expanding the field away from its limited focus on Western, so-called WEIRD countries (Western, Educated, Industrialized, Rich, Democratic; Henrich, Heine, & Norenzayan, 2010). The present study focuses on four ethnic groups in Indonesia to investigate how language and parental culture maintenance behaviour are associated with ethnic identity and well-being in a multicultural context. In the following, findings of previous studies and characteristics of Indonesia as a unique context to study bilingualism, ethnic identity, and well-being are described.

With more than 300 ethnic languages and 633 ethnic groups, spread over more than 17,000 islands (Suryadinata et al., 2003), Indonesia is highly multicultural due to historic immigration - yet, there are few recent immigrants. Javanese make up the dominant and biggest ethnic group in Indonesia (around 40% of the population); most of the Indonesian population lives in Java (around 60%), predominantly in Central and East Java where around 70% of the population is Javanese (Suryadinata et al., 2003).

The ethnic groups under study have been in the country for multiple generations. Bahasa Indonesia is the official Indonesian national language that is used for communication between ethnic groups, yet it is spoken as the first language by only 1.6% of the Indonesian population (Suryadinata et al., 2003). When the language became the official language in 1928, its name was changed from Malay to Bahasa Indonesia (in English often referred to as Indonesian). Whenever we refer to the national language in the present study, we refer to Bahasa Indonesia. All ethnic groups are highly proficient in Bahasa Indonesia. Hence, proficiency in Bahasa Indonesia is not a differentiating factor between the ethnic groups. All ethnic groups also share a national identity, but every ethnic group also has its own ethnic language and ethnic identity. Ethnic identity is also associated with religion; for instance, Javanese is associated with Islam and Chinese with Christianity or Buddhism (Dawis, 2009; Gunawan, 2007; Liem & Mead, 2011; Suryadinata et al., 2003).

In Indonesia, ethnic languages are dominant in private life (Batak in North Sumatra and Javanese in Central Java), while Bahasa Indonesia is the lingua franca used in public places, such as work and school (Ananta, Arifin, Hasbullah, Handayani, & Pramono, 2013; Suryadinata et al., 2003). Although almost all ethnic groups speak their ethnic language, the groups differ in ethnic language proficiency and how salient their ethnic language is in their everyday lives (Chiakrawati,

2011; Dawis, 2009; Gunawan, 2007; Liem & Mead, 2011; Rafferty, 1984). As a consequence, the role of Bahasa Indonesia on the identity and well-being of adolescents can be different between groups and depend on the domains of the language usage (e.g., Arends-Tóth & van de Vijver, 2004); little is known about how languages play a role on identity and well-being in Indonesia.

North Sumatra is home to the Batak ethnic group (about 10% of the population; Suryadinata et al., 2003). They interact extensively with the Javanese (32% of the population in North Sumatra) who have migrated to North Sumatra and Chinese (20% of the population in North Sumatra). As the Batak group is smaller, there is a linguistic pressure to speak Bahasa Indonesia more than the Javanese who are dominant in Java (Gunawan, 2007; Rafferty, 1984). The Batak in North Sumatra speak Bahasa Indonesia not only in public, but also in private, daily conversations when relating to other ethnic groups, and speak Batak when interacting with their own ethnic group, which constitutes 42% of the population in North Sumatra (Suryadinata et al., 2003). North Sumatra has also the highest percentage of Chinese in Indonesia (most of them Christian or Buddhist), especially in big cities such as Medan where 20% of the population is Chinese (while the average percentage of Chinese in the Indonesian population is around 1-2%; Gunawan, 2007; Suryadinata et al., 2003). This unique context means there is less linguistic pressure and more opportunity to speak Chinese with family and friends than on other islands (Dawis, 2009). Chinese adolescents in Java do not speak Chinese at home as often as Chinese adolescents in North Sumatra where parents maintain their customs more strongly and prefer intragroup marriages (Chiakrawati, 2011; Dawis, 2009; Liem & Mead, 2011; Rafferty, 1984). Chinese parents in Java typically adopt the Javanese culture, and speak Bahasa Indonesia and Javanese more than their ethnic language, likely due to the dominance of the Javanese majority and the long history of the Chinese migration to Java (Rafferty, 1984; Suryadinata et al., 2003).

The Chinese language is only used among a very small group (1-2% in Java), and Chinese children have only been officially allowed to acquire the Chinese language after the fall of Soeharto, who reigned from 1967 till 1998 (Suryadinata et al., 2003; Gunawan, 2007). The prohibition may have arguably led to language loss among the Chinese population in Indonesia. Respondents in our study were born in or after 1998; so, they would have had, in principle, the opportunity to acquire their ethnic language. Another reason which may explain the decrease of the language usage among Chinese in Java is that there are more Chinese *peranakan* (upper class Chinese) in Java compared to other islands in Indonesia (Oetomo, 1988). These Chinese *peranakan* in Java had shifted their private language (in intimate relationships) to the Malay language as a marker of their higher social class compared to Chinese *totok* (lower class Chinese) during 19th century Dutch colonialism (Oetomo, 1988). Chinese *totok* (lower class Chinese) can be found more in North Sumatra than in Java (Oetomo, 1988).

## THE PRESENT STUDY

It has been shown that parental culture maintenance behaviour has direct and indirect effects on well-being through ethnic identity and through language (Dimitrova et al., 2013, 2014; Downie et al., 2007; Han, 2009; Phinney et al., 2001; Rotheram & Phinney, 1987; Smith et al., 1999). Therefore,

we propose a mediation model in which the link between parental culture maintenance behaviour and well-being is mediated through speaking Bahasa at home and national identity on the one hand, and speaking the ethnic language and ethnic identity on the other hand (see Figure 1). We set out to investigate the relations of parental culture maintenance behaviour with national identity, ethnic identity, usage of Bahasa Indonesia at home, ethnic language usage at home, and well-being in the multiethnic and multilingual context of Indonesia. Parental culture maintenance behaviour relates to both national and ethnic identity, because of the unique context of Indonesia where the Chinese groups are descendants of the immigrants (3rd or 4th generation on average) who speak Bahasa Indonesia as fluently as the other ethnic groups and identify as Indonesians, not immigrants (Rafferty, 1984; Suryadinata et al., 2003).

Given the regional and ethnic differences in Indonesia, it appears likely that the pattern of languages spoken at home differs across ethnic groups. This assumption is in line with other studies which document differences in language use and valuation of one immigrant group (Turkish) across different contexts of residence (e.g., Australia, France, Germany, the Netherlands; see Yağmur & Van de Vijver, 2012). Turks in France are discouraged to use their ethnic language but find it difficult to become accepted by the mainstream group. This combination of language assimilation and exclusion is associated with less use of Turkish but also less identification with the mainstream group compared to other countries. We suggest that Chinese in Java who were forced to assimilate to the Javanese culture may be similar to the Turks in France, because they speak their ethnic language less than Bahasa Indonesia and Javanese, and, being a visible minority, they are less accepted by the mainstream group (Dawis, 2009). Unlike Chinese in Medan, who tend to maintain Chinese culture and language, and who discourage interethnic marriages, Chinese in Java have a long history (since the 15th century) of adjusting to the local culture, local languages, and the Islamic religion, and interethnic marriages are common (Dawis, 2009; Qurtuby, 2009; Rafferty, 1984). Hence, similar to Turks in France, Chinese in Java might speak Chinese less frequently, identify less with the mainstream group and therefore score lower on national identity. We expect that both Chinese groups will self-identify as Chinese, but that the Chinese in Java will speak Bahasa Indonesia more and Chinese less than Chinese in North Sumatra.

The present study has two parts. The first part addresses a proposed model of the relationships between parental culture maintenance behaviour, usage of the ethnic language and Bahasa, identity, and well-being. The model we propose is a mediation model in which the link between parental culture maintenance behaviour and well-being is mediated through speaking Bahasa at home and national identity on the one hand and speaking the ethnic language and ethnic identity on the other hand (see Figure 1). In the second part, we test two hypotheses about cultural group differences:

1. Bahasa Indonesia is spoken more among Chinese in Java than among Chinese in North Sumatra.

2. The Chinese groups score higher on ethnic identity and lower on national identity than the Javanese and the Batak.

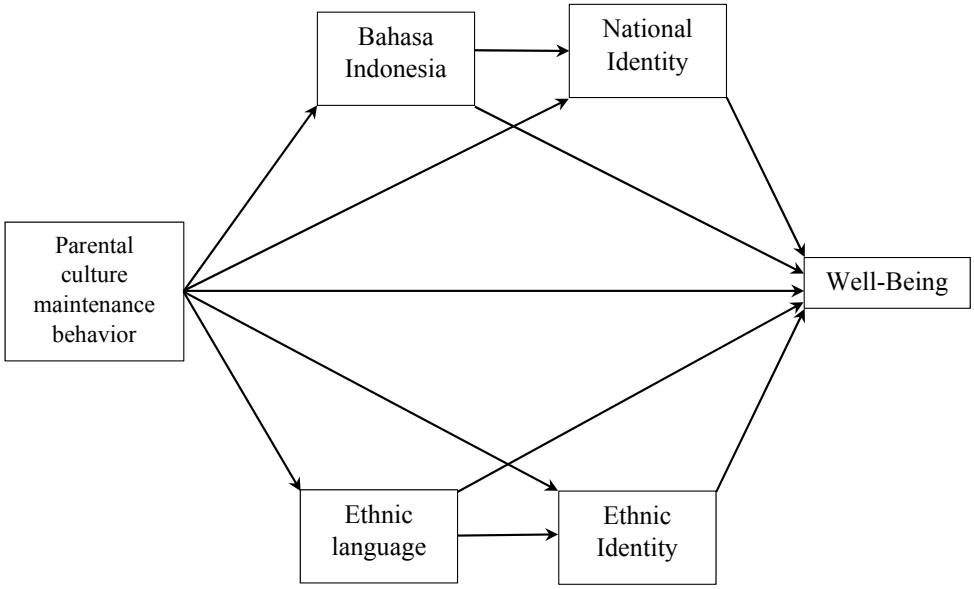


**Figure 1. Conceptual models of THE link between parental cultural maintenance, identity, and well-being.**

## METHOD

### Participants

Participants were 448 adolescents (261 female) between 12 and 19 years old ($M$ = 15.92) with one of their parents, 448 parents in total (see Table 1). One parent of each adolescent filled in the parental cultural maintenance behaviour questionnaire. The adolescents came from four groups; two Chinese groups (144 Chinese from Java and 84 Chinese from North Sumatra) as minority samples, Batak as the non-dominant native group in North Sumatra (112 respondents), and Javanese as the dominant native sample in Java (108 respondents). The composition of total males and females was comparable overall, $\chi^2(2) = 1.59$, $p = .45$ (see Table 1). The median of the parental education level was secondary school. There were no missing values in the observed variables, with the exception of paternal and/or maternal education levels (1 Batak, 10 Javanese, 1 Chinese from North Sumatra, and 5 Chinese from Java). Missing scores on father's education and mother's education were replaced by using imputed values (MCAR test: $\chi^2(2) = 2.18$, $p = .34$).

### Procedure

All questionnaires were translated from English into Bahasa Indonesia following a translation/back-translation procedure (Van de Vijver & Leung, 1997). Consent of participants was collected through the schools. Each participant filled in all questionnaires by paper and pencil in their schools or at home. One of the parents of the respondents filled in the parental culture maintenance behaviour questionnaire at home.

**Table 1.** Sample Characteristics

| | Javanese | Batak | Chinese in Java | Chinese in Sumatra | Total |
|---|---|---|---|---|---|
| N | 108 | 112 | 144 | 84 | 448 |
| Male (%) | 29.63 | 49.11 | 41.67 | 47.62 | 41.74 |
| Father's education (%) | | | | | |
| 1 = elementary | 19.44 | 4.46 | 0.69 | 8.33 | 7.59 |
| 2 = junior high | 19.44 | 6.25 | 0.69 | 14.29 | 9.15 |
| 3 = high school | 40.74 | 55.36 | 20.83 | 64.29 | 42.41 |
| 4 = college | 0.93 | 5.36 | 7.64 | 0 | 4.02 |
| 5 = university | 10.19 | 25.89 | 54.17 | 11.90 | 28.57 |
| 6 = above | 0 | 1.79 | 12.50 | 0 | 4.46 |
| no information | 9.26 | 0.89 | 3.47 | 1.19 | 3.79 |
| Mother's education (%) | | | | | |
| 1 = elementary | 25.93 | 6.25 | 1.39 | 5.95 | 9.38 |
| 2 = junior high | 23.15 | 10.71 | 2.08 | 13.10 | 11.38 |
| 3 = high school | 27.78 | 57.14 | 18.06 | 59.52 | 37.95 |
| 4 = college | 2.78 | 6.25 | 10.42 | 7.14 | 6.92 |
| 5 = university | 8.33 | 18.75 | 58.33 | 9.52 | 27.23 |
| 6 = above | 0 | 0 | 4.86 | 0 | 1.56 |
| no information | 12.04 | 0.89 | 4.86 | 4.76 | 5.58 |
| Paternal Education (Mean) | 2.62 | 3.49 | 4.49 | 2.95 | 3.53 |
| Maternal Education (Mean) | 2.36 | 3.22 | 4.47 | 3.06 | 3.38 |
| *M* Age | 14.80 | 17.54 | 15.06 | 16.66 | 15.92 |
| *SD* Age | 1.41 | 1.14 | 2.03 | 1.79 | 2.00 |

## Measurements

### *Demographic characteristics*

Participant's age, gender, ethnic group membership, religion, and father's and mother's level of education were reported. The parental level of education was coded into six scores: 1 for elementary school, 2 for junior high school, 3 for high school, 4 for college, 5 for university, and 6 for above (see Table 1).

### *Well-being*

*Well-being* comprises both cognitive aspect and emotional aspect we adopt from previous work with the same procedure (Dimitrova, van de Vijver, Taušová, Chasiotis, Bender, Buzea, Uka, & Tair, 2017). *Cognitive well-being* is measured with the Satisfaction with Life Scale (range of α values = .67 - .80) which consists of 5 items such as "If I could live my life over, I would change almost nothing" (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Response options ranged from 1 (strongly disagree) to 7 (strongly agree). *Emotional well-being* is measured with the Positive and Negative Affective Schedule, which consists of items such as "interested", "nervous", and "strong" (PANAS; Watson, Clark, & Tellegen, 1988). Response options ranged from 1 (*very slightly or not at all*) to 5 (*extremely*). One item of the PANAS ("cautious") was dropped because the item did not work well (α was higher when item was deleted). After dropping this item, we have 9 positive items

and 10 negative items (range of α values = .60 - .83), and the score of negative items was reversed so that the overall score was positive. The total score of well-being is the sum of the *z*-scores of SWLS and PANAS controlling for age and parental level of education ($r$ = .27, $p$ < .01; see results).

### *Parental culture maintenance behaviour*

Parental culture maintenance behaviour was measured with a scale adapted from Phinney et al. (2001). It consists of 6 items that assess the extent to which parents maintain their ethnic culture by instilling ethnic pride, discussing ethnic history and the meaning of being Indonesian/Chinese/Javanese/Batak, and encouraging their children to learn and practice their own traditions and values of origin. One of the parents of each adolescent filled in the questionnaires. Typical items are "We teach our children about what it means to be Indonesian/Chinese" and "We discuss Indonesian/Chinese history with our child". Response options ranged from 1 (*almost never*) to 5 (*almost always*) (range of α across ethnic groups = .85 - .90). We conducted exploratory factor analyses to examine the equivalence of the scale. The scale was unifactorial; we computed the factor congruence across all pairs of ethnic groups (Van de Vijver & Leung, 1997). Values of Tucker's phi, a measure of congruence, were above .99 across ethnic groups, which suggests factorial similarity).

### *National and ethnic identity*

The scale to measure ethnic identity was a version of the Multigroup Ethnic Identity Measurement (Phinney, 1992). The scale consists of 81 items that relate to ethnic and religious group identification. Participants were asked to indicate their agreement with statements such as "I consider myself Indonesian" and "I feel that being Indonesian/Chinese is valuable". Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). We divided the score into national identity scores (27 items, range of α values ethnic group = .88 - .96, Tucker's phi values > .95) and ethnic-religion identity scores (54 items, range of α values = .95 - .96, Tucker's phi values > .95).

### *Language usage at home*

The questionnaire consists of 8 items covering four interactions between father, mother, and child in speaking Bahasa Indonesia and ethnic language at home (Han, 2010; Han & Huang, 2010; Phinney et al., 2001): mother's language spoken to child, father's language spoken to child, child's language spoken to mother, and child's language spoken to father. There are four possible language use frequencies: *never*, *sometimes*, *often*, or *very often* speak the ethnic language (range of α values = .91 - .96, Tucker's phi values > .99) and Bahasa Indonesia (range of α values = .89 - .97, Tucker's phi values > .99).

## RESULTS

Before conducting the analyses, we checked differences in father's education level, mother's education level, age, and gender between groups. There were significant group differences in father's education level ($F$(3, 381) = 83.76, $p$ < .001, (partial) $h^2$ = .40), mother's education level ($F$(3, 373) = 97.02, $p$ < .001, $h^2$ = .44), and age ($F$(3, 444) = 71.04, $p$ < .001, $h^2$ = .32). The lowest levels of

education for mother and father, and the youngest age were found among the Javanese. We also checked for gender effects on the observed variables while controlling for father's and mother's education level. There were no differences between males and females on any observed variable (Wilks' Lambda = .99, $F(6, 441) = 1.02$, $p = .41$, $h^2 = .01$). To control the influence of age and both father's and mother's education (see Table 2), SEM analyses and post hoc tests were conducted using residual scores controlling for father's education, mother's education, and age.

## Multigroup Path Analysis

In order to test whether relations held across all ethnic groups (Javanese, Batak, Chinese in Java, and Chinese in North Sumatra), multigroup path analyses were computed (see Figure 1 for the conceptual model). We used the residual scores (controlling for father's and mother's education and age) of parental culture maintenance behaviour, ethnic identity, national identity, ethnic language, national language, and well-being. The results of the invariance tests are presented in Table 3. The most restrictive model with a good fit was the structural covariances model, suggesting that all regression coefficients were identical across groups. The results of our SEM multigroup analysis to test that the mediation model in which the link between parental culture maintenance behaviour and well-being is mediated through speaking Bahasa at home and national identity on the one hand and speaking the ethnic language and ethnic identity on the other hand are presented in Table 3 and Figure 2. The unconstrained model, structural weights model, and structural covariances model showed an adequate fit (see Table 3); furthermore, incremental fit indices suggested that the structural residuals covariances was the most restrictive model with an acceptable fit.

As expected, parental culture maintenance behaviour was positively associated with both national and ethnic identity, and indirectly through the identities with well-being across all groups (bootstrap mediation confidence 95% intervals; $p < .001$). Both national and ethnic identities were also positively associated with well-being across all groups. The model fit confirmed that the model can be applied across groups; yet, the paths from languages to identities and languages to well-being were not significant. Furthermore, the error component of ethnic language usage at home was negatively associated with the error component of Bahasa Indonesia usage at home in all groups, and the error component of ethnic identity was positively associated with the error component of national identity in all groups (not depicted in Figure 2). As expected the mediation model was applicable in all groups, but unlike previous studies conducted in other countries, we could not find significant correlations between the languages spoken at home and well-being, between Bahasa Indonesia spoken at home and national identity.

## Group Differences in Means

To make sure that means can be compared, residual scores controlling for father and mother's education and age were used in a MANOVA testing group differences on all scales, followed by post hoc tests. The results showed that Chinese in North Sumatra spoke their ethnic language more ($p < .001$) and Bahasa Indonesia less ($p < .001$) than Chinese in Java, but there was no difference in ethnic identity or national identity, as expected (see Table 2). Thus, we found support for hypothesis

**Table 2.** Raw Means, Corrected Means (Controlling for Age, Father's and Mother's Education), and *Post Hoc* Test

| | | | | | Significance level of *post hoc* test | | |
|---|---|---|---|---|---|---|---|
| **Variables** | **Ethnic Groups** | **Means (*SD*)** | **N** | **Corrected Means** | **Javanese** | **Batak** | **Chinese (Java)** |
| Parental Culture Maintenance Behavior | Javanese | 23.01 (4.17) | 108 | .03 | | | |
| | Batak | 24.12 (4.68) | 112 | .70 | .26 | | |
| | Chinese in Java | 21.46 (4.69) | 144 | -.93 | .10 | .01** | |
| | Chinese in Sumatra | 24.02 (4.09) | 84 | .62 | .32 | .90 | .01** |
| | Total | 22.98 (4.59) | 448 | | | | |
| Indonesian language spoken at home | Javanese | 86.93 (12.06) | | -.74 | | | |
| | Batak | 92.93 (12.61) | | .85 | .00** | | |
| | Chinese in Java | 92.21 (12.30) | | 1.56 | .00*** | .11 | |
| | Chinese in Sumatra | 91.21 (12.30) | | -2.88 | .00*** | .00*** | .00*** |
| | Total | 91.04 (12.07) | | | | | |
| Ethnic language spoken at home | Javanese | 107.06 (10.66) | | .65 | | | |
| | Batak | 110.87 (10.61) | | -.58 | .02* | | |
| | Chinese in Java | 92.42 (17.56) | | -1.82 | .00*** | .00*** | |
| | Chinese in Sumatra | 95.87 (17.55) | | 3.06 | .00*** | .00*** | .00*** |
| | Total | 101.21 (16.52) | | | | | |
| National Identity | Javanese | 203.63 (23.79) | | 3.71 | | | |
| | Batak | 216.27 (24.13) | | 8.12 | .00** | | |
| | Chinese in Java | 204.26 (26.68) | | -5.04 | .00*** | .00*** | |
| | Chinese in Sumatra | 205.81 (29.51) | | -6.96 | .00*** | .00*** | .43 |
| | Total | 207.40 (26.39) | | | | | |
| Ethnic Identity | Javanese | 8.61 (3.37) | | -1.63 | | | |
| | Batak | 11.32 (4.41) | | 4.34 | .07 | | |
| | Chinese in Java | 14.37 (2.61) | | .18 | .58 | .20 | |
| | Chinese in Sumatra | 7.01 (2.44) | | -3.99 | .53 | .03* | .27 |
| | Total | 10.84 (4.34) | | | | | |
| Well-being | Javanese | 86.93 (12.07) | | 1.51 | | | |
| | Batak | 92.93 (12.61) | | 1.64 | .00*** | | |
| | Chinese in Java | 92.21 (12.30) | | 1.66 | .00*** | 1.00 | |
| | Chinese in Sumatra | 91.81 (9.66) | | 1.54 | .01** | 1.00 | 1.00 |
| | Total | 91.04 (12.12) | | -.16 | | | |

*p < .05. **p < .01. ***p < .001.
Note: The same N is applied for all variables.

1. As expected, the groups that are regarded as native groups scored higher on national identity than the Chinese groups which is regarded as an immigrant group, but there was no difference in ethnic identity between the Javanese and the two Chinese groups, and between the Batak and the Chinese in Java (see Table 2). Contrary to our expectation, Chinese in North Sumatra scored significantly lower than Batak on ethnic identity (see Table 2). Hence, hypothesis 2 is only partially supported.

**Table 3.** Fit Indices of Path Model

| | $\chi^2$ (*df*), *p* | TLI | CFI | AGFI | RMSEA[a] |
|---|---|---|---|---|---|
| Unconstrained | 9.84 (8), .28 | .97 | 1.00 | .93 | .02 (.00, .06) |
| Structural weights | 52.53 (41), .11 | .97 | .98 | .92 | .03 (.00, .04) |
| Structural covariances | 56.91 (44), .09 | .97 | .98 | .92 | .03 (.00, .04) |
| Structural residuals | 228.09 (65), .00 | .72 | .70 | .83 | .08 (.07, .09) |

[a]Numbers between parentheses refer to the 90% confidence interval.

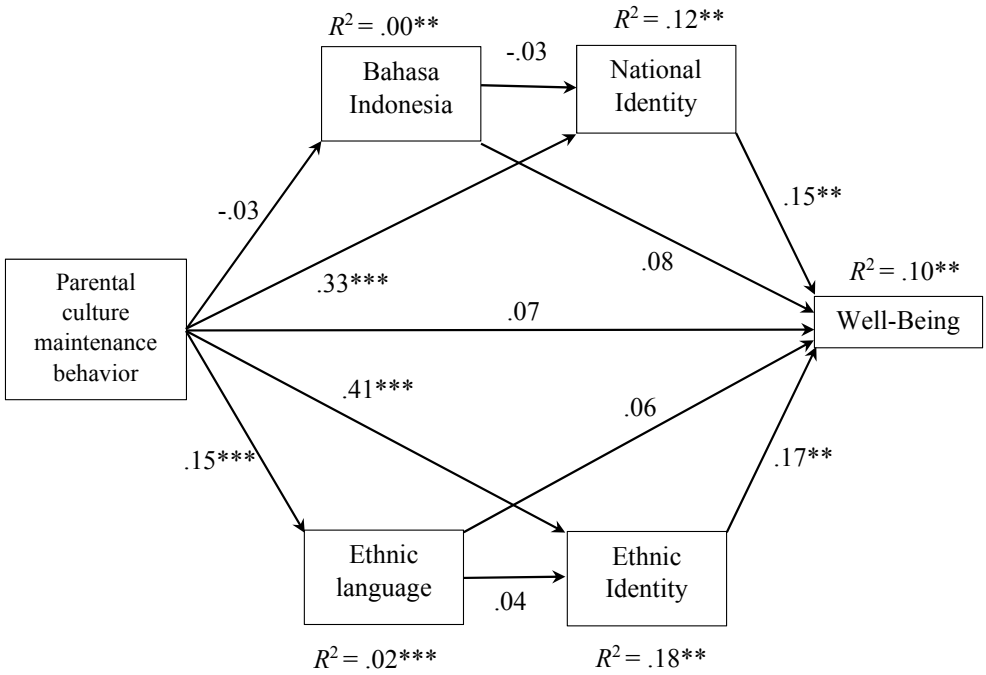


**Figure 2. Regression weights of multigroup model (structural covariances model, standardized).** $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

## DISCUSSION

This study investigated how parental cultural maintenance behaviour and language usage at home relate to national identity, ethnic identity, and well-being among adolescents in the multiethnic and multilingual context of Indonesia. In line with the previous studies (Choi, 2015; Dimitrova et al., 2013, 2014; Downie et al., 2007; Han, 2009; Phinney, et al., 2001; Rotheram & Phinney, 1987; Smith et al., 1999), our results show that parental culture maintenance behaviour is positively associated with both national and ethnic identity, which in turn is positively associated with well-being; this study is the first providing this evidence for Indonesian adolescents.

Previous studies have shown that identity and language are closely linked (Choi, 2015; Le Page, 1972; Phinney et al., 2001). Not finding Bahasa Indonesia to correlate with identity is likely

due to it being the official language in Indonesia, which makes it important for all groups across all parts of Indonesia. The crucial role of Bahasa in everyday life seems to imply that everyone uses the language and that its affective component is limited. As a result, Bahasa Indonesia seems independent of identity and well-being. Regarding ethnic language usage at home, the Chinese in North Sumatra speak their ethnic language more than Bahasa Indonesia. They speak their ethnic language the most and Bahasa Indonesia the least compared to the other groups, and the significant correlation between ethnic language usage at home and ethnic identity was only found among the Chinese in North Sumatra (see Table 3 & 4). A reason might be that in North Sumatra, especially in Medan, 20% of the population is Chinese, and the Chinese culture is more accepted and the Chinese language is freely used to relate to each other within the ethnic group (Gunawan, 2007). Another reason why Chinese speak their ethnic language much less than other groups is that most Chinese *peranakan* who had shifted language use in private relationships to Malay language (which later became Bahasa Indonesia) live in Java, and there are more Chinese *totok* (lower class) in North Sumatra than in Java (Oetomo, 1988). Speaking Bahasa Indonesia is a marker of Chinese *peranakan* (upper class) in Java, and speaking Chinese is a marker of Chinese *totok* (lower class) in North Sumatra. It is interesting that even within a single ethnic group (Chinese), language usage is a social marker. Hence, cultures differ in which identity aspects are

**Table 4.** Bivariate Correlations per Ethnic Group between Psychological Variables Controlling for Age and Parents' Education

| | | Well-being | Bahasa Indonesia | Ethnic Language | Parental Cultural Maintenance | National Identity |
|---|---|---|---|---|---|---|
| Bahasa Indonesia usage at Home | Javanese | .06 | | | | |
| | Batak | .04 | | | | |
| | Chinese in Java | .03 | | | | |
| | Chinese in Sumatra | .05 | | | | |
| Ethnic Language Usage at Home | Javanese | -.04 | -.54*** | | | |
| | Batak | .11 | -.76*** | | | |
| | Chinese in Java | .07 | -.52*** | | | |
| | Chinese in Sumatra | .13 | -.45*** | | | |
| Parental Cultural Maintenance Behavior | Javanese | .12 | -.23* | .19* | | |
| | Batak | .28** | .10 | .01 | | |
| | Chinese in Java | .12 | .06 | .14 | | |
| | Chinese in Sumatra | .24* | -,12 | .26* | | |
| National Identity | Javanese | .18 | -.15 | .15 | .33** | |
| | Batak | .25** | .15 | .05 | .42*** | |
| | Chinese in Java | .34*** | -.04 | .09 | .15 | |
| | Chinese in Sumatra | .21 | -.04 | .12 | .33** | |
| Ethnic Identity | Javanese | .35*** | -.01 | .05 | .24* | .69*** |
| | Batak | .35*** | .11 | .08 | .42*** | .73*** |
| | Chinese in Java | .20* | .06 | .16 | .47*** | .39*** |
| | Chinese in Sumatra | .27* | -.10 | .30** | .53*** | .39*** |

*$p$ < .05. **$p$ < .01. ***$p$ < .001 (two-tailed significance)

more salient. Moreover, the opportunity to speak Chinese with family and peers in Java is much smaller, and Chinese are expected to to assimilate to the local culture more than in North Sumatra. This might explain why the Chinese in Java speak Bahasa Indonesia more and their ethnic language less than any of the other groups, and why the role of ethnic language for developing their ethnic identity among the minority Chinese in Java is less important than among the Chinese in North Sumatra. This explains the relationship between ethnic language and ethnic identity among the Chinese in North Sumatra and the absence of that relationship among the Chinese in Java (see Table 4). Bilingualism appears to be particularly important among the minority group that is regarded as an out group immigrant, such as the Chinese in North Sumatra (Han, 2010), but not the Chinese in Java who have been in Java for many centuries. The difference between the Chinese in North Sumatra and in Java may be similar to the difference found among groups of immigrants in the U.S.A., demonstrating that the correlations between parents' culture maintenance and ethnic identity and ethnic language may vary between immigrant groups (Phinney et al., 2001).

Another remarkable and unexpected finding is that there is no difference between Javanese, Chinese in Central Java, and Chinese in North Sumatra in ethnic identity - but the Batak who are regarded as the native descendants in Indonesia score higher on ethnic identity than the Chinese in North Sumatra who are regarded as descendants of immigrants (see Dawis, 2009; Gunawan, 2007). We assume that this is due to the position of the Batak as a minority group. Although they are regarded as native descendants, it may be very important for Batak to maintain their ethnic identity and positive distinctiveness in an intergroup context with multiple other ethnic groups. Batak are known to have a specific value pattern that is distinct from other groups, as reflected in one of their central mottos: "*Hamoraon, Hagabeon, Hasangapon*" (wealth, success, family honor and posterity; Harahap & Siahaan, 1987; Irmawati, 2007). These values encourage Batak people to attain higher societal positions via education and jobs, which could lead to more interactions with other cultures and ethnic groups, which in turn may increase the importance of maintaining their ethnic identity, while at the same time it is likely to enhance their Bahasa skills (Borualogo, Hamdan, & Ramdani, 2015; Prasiwi & Susandari, 2015). Different from the Batak, Javanese have almost the opposite values of living; their value of *nrimo ing pandum* means 'accepting all things in life with gratitude', *samadya* which means 'not expecting something too high or too low' (Aryandini, 2011), and harmony which includes maintaining relationships in the family, the society, and with nature (Suseno, 1997), which may influence Javanese's perspective of their language and ethnic identity. Moreover, speaking Bahasa Indonesia is not necessarily important to attain a higher position in the society for the Javanese, while for the Chinese as descendants of immigrants, speaking Bahasa Indonesia is a pragmatic necessity to relate to the native descendant groups in Indonesia. That might be the reason why there are differences in the usage of Bahasa Indonesia and ethnic languages between groups, but the relationship of these languages with identity is still the same across groups.

It has been documented before that parental culture maintenance behaviour is important for ethnic identity, and that ethnic identity correlates with well-being. This study provides further information that the relations between parental culture maintenance through national and ethnic identity, with well-being extend beyond an immigration context and are also found in both majority

native descendant and minority non-immigrant groups in a multicultural context were multiple ethnic groups have been living together for extended periods of time. Furthermore, different from studies on immigrants, this study shows that in the context where language is not a salient source of individual differences, language usage at home does not influence ethnic identity and well-being.

## LIMITATIONS

While the results of the study demonstrate that parental culture maintenance behaviour, national identity, and ethnic identity are related to well-being among adolescents across groups in Indonesia, it is important to note that these data are correlational and that we cannot infer causality from these relationships. Another limitation is that we did not measure a participant's actual language proficiency since the scores of ethnic language and Bahasa Indonesia spoken at home are based solely on self-reports. Thus, a replication of the present study with better measures for language usage and an extension to other ethnic groups and cultures will contribute to the understanding of the relations between parental culture maintenance behaviour, ethnic language, ethnic identity, national language, national identity, and well-being.

## CONCLUSION

This study provides novel information on how parental culture maintenance relates to well-being of adolescents through the national and ethnic identity across different groups in a multicultural country where no group is an immigrant group. Our study has shown that links between identities and well-being among bicultural/multicultural adolescents, often found in Western studies, could be replicated in Indonesia. Although we can show that identity correlates to well-being, this study shows that speaking language does not correlate to identity and well-being. There does not seem to be any reason for assuming cultural specificity of the positive link between identity and well-being. Yet, cultures differ in which identity aspects are more salient (e.g., ethnic, religious, or linguistic). Moreover, our study indicates that distinctive aspects, such as speaking a language, can lose their salience for identity when speaking a language is not an implicit ethnic affirmation but a functional aspect of everyday life. Once speaking a language is a ubiquitous and functional way of interacting in a society, it becomes unrelated to identity. It is interesting to note that in the Chinese group, language usage is a marker of social status (with *peranakan* Bahasa speakers accentuating their high status and *totok* Chinese speakers accentuating their low status). So, language plays a role in this group beyond functionality. This mechanism is not found in the other groups. It is clear that Indonesia is a good example of the many complex relationships that can exist between language and identity. Language has a complex relationship with identity in Indonesia.

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# APPENDIX 1

## Well-being Questionnaires

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neither agree nor disagree
5 = slightly agree
6 = agree
7 = strongly agree

| | |
|---|---|
| _____ | 1. In most ways my life is close to my ideal. |
| _____ | 2. The conditions of my life are excellent. |
| _____ | 3. I am satisfied with my life. |
| _____ | 4. So far I have gotten the important things I want in life. |
| _____ | 5. If I could live my life over, I would change almost nothing. |

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

*In front of each word, put one number using this scale:*

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| very slightly or not at all | a little | Moderately | quite a bit | Extremely |

_____interested
_____ distressed
_____ excited
_____ upset
_____ strong
_____ guilty
_____ scared
_____ hostile
_____ enthusiastic
_____ proud

_____ irritable irritabile
_____ alert vivace
_____ ashamed
_____ inspired
_____ nervous
_____ determined deciso
_____ attentive
_____ jittery
_____ active
_____ afraid

# APPENDIX 2

## Parental culture maintenance behavior Questionnaire

Use the numbers below to indicate whether you agree or disagree with the given statement

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. We teach our child about what it means to be [culture 1/culture 2].

2. We discuss [culture 2] history with our child.

3. We encourage our child to learn about [culture 2] traditions and customs.

4. We discuss with our child differences between [culture 1] and [culture 2 or mixed culture 1-2] ways.

5. We try to instill in our child pride in being of [culture 2] descent.

6. We make an effort to have our child learn [culture 2].

### Note:

The terms in brackets may be substituted for any appropriate group of interest. The preferred scoring is to use the mean of the six items. For use with ethnic minority and immigrant parents

## APPENDIX 3

### Language usage at home

Use the numbers below to indicate how often you speak Bahasa Indonesia / ethnic language at home

1 = never
2 = sometimes
3 = often
4 = very often

*Bahasa Indonesia*

1. Father speak [national language] to the child

2. Mother speak [national language] to the child

3. Child speak [national language] to mother

4. Child speak [national language] to father

*Ethnic Language*

1. Father speak [ethnic language] to the child

2. Mother speak [ethnic language] to the child

3. Child speak [ethnic language] to mother

4. Child speak [ethnic language] to father

**Note:**

The terms in brackets may be substituted for any appropriate group of interest.

# APPENDIX 4

## National and ethnic identity questionnaire

Elements of Collective Identity to be randomized in the final version

1. Self-Categorization
2. Attachment and Emotional belonging
3. Evaluation
4. Importance
5. Behavioural Involvement

E = ethnic group identification
R = religious group identification
dominant culture = Indonesian
ethnic culture = Javanese/Batak/Chinese
1, 2, 3 item number

### 1. Self-Categorization

*a) Ethnic group*

1. E 1 I consider myself (dominant culture; Indonesian).
1. E 1a I consider myself (ethnic culture; Javanese/Batak/Chinese).
1. E 2 I see myself as (dominant culture).
1. E 2a I see myself as (ethnic culture).
1. E 3 Being (dominant culture) is an important part of who I am.
1. E 3a Being (ethnic culture) is an important part of who I am.
1. E 4 I perceive myself as part of the (dominant culture) community.
1. E 4a I perceive myself as a member of the (ethnic culture) community.

*b) Religion*

1. R 1 I consider myself part of my religious community.
1. R 2 I see myself as a member of my religious community.
1. R 3 Being a member of my religious community is an important part of who I am.
1. R 4 I perceive myself as a member of my religious community.

### 2. Attachment and Emotional Belonging

*a) Ethnic group*

2. E 1 I feel strongly connected to (dominant culture) people.
2. E 1a I feel strongly connected to (ethnic culture) people.
2. E 2 I see problems of (dominant culture) people as my problems.
2. E 2a I see problems of (ethnic culture) people as my problems.
2. E 3 Being (dominant culture) has much to do with how I feel about myself.
2. E 3a Being (ethnic culture) has much to do with how I feel about myself.

2. E 4 My life is closely related to the life of the (dominant culture) people.
2. E 4a My life is closely related to the life of the (ethnic culture) people.
2. E 5 I feel respected by (dominant culture) people.
2. E 5a I feel respected by (ethnic culture) people.
2. E 6 If someone said something bad about (dominant culture) people, I would feel that it refers to me.
2. E 6a If someone said something bad about (ethnic culture) people, I would feel that it refers to me.
2. E 7 I have a strong sense of belonging to the (dominant culture) community.
2. E 7a I have a strong sense of belonging to the (ethnic culture) community.

*b) Religion*

2. R 1 I feel strongly connected to my religious community.
2. R 2 I see problems of my religious community as my problems.
2. R 3 Being part of my religious community has much to do with how I feel about myself.
2. R 4 I have a strong sense of belonging to my religious community.
2. R 5 My life is closely related to the life of members of my religious community.
2. R 6 I feel respected by members of my religious community.
2. R 7 If someone said something bad about my religious community, I would feel that it refers to me.

**3. Evaluation**

*a) Ethnic group*

3. E 1 It makes me happy to be a member of the (dominant culture) community.
3. E 1a It makes me happy to be a member of the (ethnic culture) community.
3. E 2 I am proud to be a member of the (dominant culture) community.
3. E 2a I am proud to be a member of the (ethnic culture) community.
3. E 3 I value feeling very close to (dominant culture) people.
3. E 3a I value feeling very close to (ethnic culture)people.
3. E 4 I feel that being (dominant culture) is valuable.
3. E 4a I feel that being (ethnic culture)is valuable.

*b) Religion*

3. R 1 It makes me happy to be a member of my religious community.
3. R 2 I am proud to be a member of my religious community.
3. R 3 I value feeling very close to my religious community.
3. R 4 I feel that being part of my religious community is valuable.

### 4. Importance

*a) Ethnic group*

4. E 1 Being (dominant culture) is important for me.
4. E 1a Being (ethnic culture) is important for me.
4. E 2 Being (dominant culture) is a significant part of my life.
4. E 2a Being (ethnic culture) is a significant part of my life.
4. E 3 Belonging to the (dominant culture) community is an essential part of who I am.
4. E 3a Belonging to the (ethnic culture) community is an essential part of who I am.
4. E 4 (dominant culture) friends have significant influence on my decisions.
4. E 4a (ethnic culture) friends have significant influence on my decisions.
4. E 5 When I need help, I can count on the (dominant culture) community.
4. E 5a When I need help, I can count on the (ethnic culture) community.

*b) Religion*

4. R 1 Being a member of my religious community is important for me.
4. R 2 Being a member of my religious community is a significant part of my life.
4. R 3 Belonging to my religious community is an essential part of who I am.
4. R 4 Members of my religious community have significant influence on my decisions.
4. R 5 When I need help, I can count on my religious community.

### 5. Behavioural Involvement

*a) Ethnic group*

5. E 1 I participate in (dominant culture) cultural practices (e.g., events with special food, music and customs).
5. E 1a I participate in (ethnic culture) cultural practices (e.g., events with special food, music and customs).
5. E 2 I spend much time trying to find out more about the (dominant culture) culture (e.g., history, traditions and customs).
5. E 2a I spend much time trying to find out more about the (ethnic culture) culture (e.g., history, traditions and customs).
5. E 3 I spend much time with (dominant culture) friends.
5. E 3a I spend much time with (ethnic culture) friends.
5. E 4 I often get together with (dominant culture) people.
5. E 4a I often get together with (ethnic culture) people.
5. E 5 I donate to charitable causes regarding the (dominant culture) community.
5. E 5a I donate to charitable causes regarding the (ethnic culture) community.
5. E 6 I talk about my problems with (dominant culture) friends.
5. E 6a I talk about my problems with (ethnic culture) friends.
5. E 7 I volunteer for (dominant culture) organizations.
5. E 7a I volunteer for (ethnic culture) organizations.

*b) Religion*

5. R 1 I have spent much time exploring my religious community (e.g., its rituals, history and traditions).
5. R 2 I participate in religious associations.
5. R 3 I spend much time with members of my religious community.
5. R 4 I give financial contribution to religious organizations.
5. R 5 I talk about my problems with members of my religious community.
5. R 6 I volunteer for purposes of my religious community.
5. R 7 I often talk about religious issues with people.

# CHAPTER 3

## THE IMPORTANCE OF LANGUAGE VOCABULARY AND LANGUAGE USAGE FOR SOCIOCULTURAL ADJUSTMENT AMONG INDONESIAN ADOLESCENTS FROM THREE BILINGUAL ETHNIC GROUPS

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## ABSTRACT

We investigated how the knowledge and usage of two languages relate to sociocultural adjustment in bilingual adolescent samples from three ethnic groups in Indonesia (214 Javanese, 108 Toraja, and 195 Chinese adolescents; 272 females; $M_{age}$ = 14.33 years). We tested a model specifying that the vocabulary knowledge of each language mediates the relation between language usage and sociocultural adjustment (here combining strongly correlated measures of adjustment to the ethnic and national culture). The results revealed the same partial mediation model in all groups; bilingualism is important for sociocultural adjustment in all ethnic groups. There were substantial group differences in ethnic language vocabulary scores, but the correlations between ethnic language usage with sociocultural adjustment were the same across groups. Results also showed that ethnic language usage matters more than ethnic language knowledge, and national language knowledge matters more than ethnic language knowledge for sociocultural adjustment. Moreover, our findings confirm that there is a language shift going on in Indonesia because Bahasa Indonesia as national language, which was the second language in the past, has become the dominant language across ethnic groups in Indonesia.

Keywords: adolescents, bilingualism, sociocultural adjustment, vocabulary, Indonesia.

The Importance of Language Vocabulary and Language Usage for Sociocultural Adjustment among Indonesian Adolescents from Three Bilingual Ethnic Groups

The current rapid advances in technology increase the frequency of intercultural interactions, and many individuals are exposed to and internalize more than one culture and become bicultural or multicultural (Hong, Morris, Chiu, & Benet-Martínez, 2000; Nguyen & Benet-Martínez, 2007). These individuals are not only immigrants, but also involve, among others, indigenous people and individuals in interethnic relationships (Berry, 2006; Padilla, 2006). The process of learning and adapting to the new culture/s is called acculturation (Berry, 2003); beyond social affiliation, daily living habits, cultural traditions, cultural identity/pride, perceived discrimination/prejudice, generational status, cultural knowledge, beliefs, or values, it also includes communication style, and language use (Zane & Mak, 2003). The outcomes of the acculturation are referred to as psychological adjustment, which includes psychological and emotional well-being, and sociocultural adjustment, which includes behavioral competencies (Ward & Kennedy, 1994). Many studies have reported that language proficiency contributes significantly to sociocultural adjustment (i.e., the ability to 'fit in') (e.g., Ward & Geeraert, 2016; Ward & Kennedy, 1996). However, most of those studies were conducted in Western countries, involving adults from immigrant or minority groups (Mustafa & Ilias, 2013; Ward & Kennedy, 1993), and only around 12% of the research focus on youth and adolescence (Celenk & van de Vijver, 2011; Henrich, Heine, & Norenzayan, 2010). In the present study, we investigated the role of language for sociocultural adjustment among adolescents from both dominant and non-dominant minority groups who are bilinguals and have a long history of settlement in the context. Acculturation is used here as a conceptual framework to study processes of adjustment to a multicultural context in which ethnic groups, all having their own languages, have been living together for extended periods of time or those who are in interethnic relationships (see Berry, 2006; Padilla, 2006).

Knowledge of a common language facilitates communication with people from different groups as shown in a U.S. study (Eschback, Parker, & Stoeberl, 2001). It is therefore not surprising that language ability has been associated with sociocultural adjustment (Selmer, 2006). These studies, conducted in western countries and/or immigration contexts, have shown that language usage and proficiency are positively related with sociocultural adjustment. Indonesia is an interesting context to study the link between language skill and sociocultural adjustment as the country has hundreds of ethnic groups, often with their own languages (Suryadinata, Arifin, & Ananta, 2003). This multicultural context of Indonesia provides a unique context of intercultural interactions between ethnic groups and most Indonesians speak both their ethnic language and national language (see Abtahian, Cohn, & Pepinsky, 2016). Unlike many immigrant contexts where the language of the majority dominant group has the highest status, Bahasa Indonesia as the dominant national language is not associated with the largest dominant ethnic group in Indonesia. In fact, there is no majority group in Indonesia because the largest and dominant group in Indonesia is only around 40% of the population, which is Javanese (Ananta, Arifin, Hasbullah, Handayani, Pramono, 2015; Suryadinata et al., 2003). We set out to establish whether the relations between two aspects of language, namely language usage and vocabulary, and adolescents' sociocultural adjustment are comparable to those found in immigration contexts. In our study we expand the common definition

of sociocultural adjustment by referring not only to the adjustment to the Indonesian culture, but also to the ethnic culture as both cultures are important in the lives of these adolescents.

The sample of this study comprised adolescents from three ethnic groups: Javanese (as the largest minority and dominant group), Toraja (as a small minority but regarded as native descendants), and Chinese (as a small minority and regarded as immigrant descendants). We sought to advance our knowledge on how both the dominant language (Bahasa Indonesia as the lingua franca) and ethnic languages (the heritage language of each ethnic group) relate to adolescents' sociocultural adjustment. Furthermore, we examined whether the language usage and language knowledge in the largest minority group (i.e., Javanese) play a similar role for adjustment as the languages in the much smaller groups (Toraja and Chinese), and whether language usage and knowledge in Indonesia show similar relations with sociocultural adjustment to the patterns found among immigrant groups in Western countries.

## INDONESIAN CONTEXT

Indonesia is a unique context for studying bilingualism and its relationship to sociocultural adjustment because almost everyone speaks at least two languages and there are hundreds of ethnic groups (Suryadinata et al., 2003). The official national language is Bahasa Indonesia and is used broadly in schools, radio and television broadcasts, and offices, yet the Malay language as the origin of Bahasa Indonesia is spoken as ethnic language by only 3.7% of the Indonesian population (Ananta et al., 2015; Suryadinata et al., 2003). One basic law in the Indonesian constitution (UUD 1945) is "Bhineka tunggal ika" ("unity in diversity"), implying that all ethnic groups are expected to maintain their own culture and language, but also to develop a strong national identity and to learn the national language (Nababan, 1985; Novitasari, 2013; see also Ferguson & Adams, 2015, for a similar concept of the "rainbow nation" in South Africa). Hence, by conducting research in Indonesia, we gain insight in how bilingual adolescents from minority groups (all non-migrants) speak two languages, and how that language use correlates with sociocultural adjustment. Moreover, in our study, the largest group in Indonesia (Javanese) also needs to acquire the second language (national language) like the other two smaller Chinese and Toraja groups. The adolescents in Indonesia become bilingual without migration as bilingualism is essential for effective functioning in the everyday context.

*Javanese*. Javanese are the biggest ethnic group with around 40% of the Indonesian total population, and most Javanese live in Java which is the most populated island; around 60% of the Indonesian population live in Java (Suryadinata et al., 2003). Besides Javanese, there are other smaller ethnic groups in Java, such as Sundanese (West Java), Betawi (Jakarta), Madura (East Java), Banten (West Java), and Cirebon (West Java). Most Javanese live in Central Java and East Java, where we sampled our Javanese participants. The Javanese language is spoken by 70% of the population in Java, and their size dominance in the social and politics arena enables Javanese to maintain their ethnic language from generation to generation (Suryadinata et al., 2003). We therefore expect Javanese to score higher in their ethnic language vocabulary than the other groups.

*Chinese*. The Chinese are a very small ethnic group (1-2% of the population in Java), and Chinese children have only been officially allowed to acquire the Chinese language after the fall

of Soeharto in 1998 (see Suryadinata et al., 2003). The prohibition may have led to language loss among the Chinese population in Indonesia. Respondents in this study were born in or after 1998, when the ban was abolished. Most of the Chinese respondents did not learn Mandarin at home, but at schools as their third language besides Bahasa Indonesia and English. Therefore, the ethnic language acquisition environment of the Chinese is meaningfully different from Javanese and Toraja who learned their ethnic language at home. Another reason for the ethnic language loss is that in Java, there are more Chinese *peranakan* (upper class Chinese) who during the period of Dutch colonialism since the nineteenth century had shifted their language used in the private domain to Malay, which later became the national language (Bahasa Indonesia), as a marker of their social class which is higher than Chinese *totok* (lower class Chinese) (Oetomo, 1988). Thus, Chinese are expected to have a lower score on their ethnic language vocabulary compared to Javanese and Toraja, as also found in previous study (Oetomo, 1988; Sari, Chasiotis, van De Vijver, & Bender, 2018a, 2018b; Suryadinata et al., 2003).

Toraja, who mainly live in the area of Tana Toraja, South Sulawesi, are also a minority group (0.37% of the Indonesian population); however, unlike Chinese, Toraja are regarded native to Indonesia (Suryadinata et al., 2003), and they are famous for their unique, well maintained ethnic culture, including the *Rambu Solo* tradition (Panggara, 2015). *Rambu Solo* is an ancient death ritual that is very important in the Toraja social system until now. *Rambu Solo* is part of the various practices of Toraja people aimed to maintain their identity, language and culture (Adams, 2006; Budiman, 2013; Panggara, 2015). Considering the well-maintained culture in Tana Toraja, it is interesting to see whether minority Toraja are different from the minority Chinese in Java. Although both groups are much less dominant and much smaller than Javanese, Toraja have a different political and historical background compared to the Chinese. The stronger social position of Toraja presumably makes the Toraja group better able to maintain their ethnic language and culture than Chinese (Panggara, 2015; Suryadinata et al., 2003).

## BILINGUALISM IN INDONESIA

Bahasa Indonesia as the national language is not the language of the largest group and the second language for almost all ethnic groups (Suryadinata et al., 2003). Bahasa Indonesia and more than 300 ethnic languages coexist. However, it is unclear how sociocultural adjustment among Indonesian adolescents may be influenced by the coexisting languages in Indonesian bilingualism, which comprise both national and ethnic language usage and knowledge. Indonesian culture may separate from Bahasa Indonesia due to the Indonesian context. For instance two symbols of Indonesian identity, "batik" and national emblem, are not related to the words in Bahasa Indonesia. "Batik" as national garment, which people must wear for national events or wear as uniform in offices and schools, is originally from Javanese word and art. Another important example is the national emblem which symbolizes Indonesian national identity, "Garuda Pancasila", is not related to the origin of Bahasa Indonesia, but is related to Balinese and Javanese tradition. In this study we did not include language usage as a part of sociocultural adjustment, as in Indonesia, language usage can be a predictor of sociocultural adjustment in our view.

In a previous study, it is shown that Chinese in Medan and Chinese in Java differed in how they speak their ethnic language; Chinese in Medan use their ethnic language more than Chinese in Java (Sari, van De Vijver, Chasiotis, & Bender, 2018a). More generally, the bilingualism pattern in Indonesia might differ between ethnic groups due to that context. The linguistic and cultural context of the family and community may influence the maintenance or loss of the heritage language in the process of sociocultural adjustment to become bicultural (Nesteruk, 2010; Zhang & Slaughter-Defoe, 2009). Previous studies conducted in Western countries had to take very different contextual backgrounds into consideration. In many Western contexts, the major dominant culture is usually the host culture, whereas in Indonesia most or all groups have to acquire the lingua franca (Bahasa Indonesia) while they also maintain their ethnic language (Suryadinata et al., 2003).

Studies on bilingualism among Chinese in Java are rare; yet, given the history of oppression of the Chinese language in the latter half of the previous century and based on the findings of previous study (Sari et al., 2018a, 2018b), we expect that Chinese in Java may be less bilingual than the other groups, and may have Bahasa Indonesia as their dominant language. By studying this unique group in a multicultural country such as Indonesia, we can contribute theoretically to understanding the complexity of the relation between language and cultural adjustment, and the role of language as a mediator, as well as the importance to consider the cultural context in studying different ethnic groups when investigating the relation between language and psychological outcomes.

There are only few studies which have been conducted in Indonesia on bilingualism-related acculturation and they are usually not addressing psychological outcomes (e.g., Barlett, 1952; Kurniasih, 2006; Nababan, 1985). Barlett (1952), studied acculturation, and examined ethnic language maintenance and the spread of Bahasa Indonesia (Nababan, 1985). A study by Kurniasih's (2006) in Jogjakarta (Java) about bilingualism patterns among school age (11 and 14 year old) Javanese children found that middle-class parents and children used Bahasa Indonesia much more than their working-class counterparts. However, there is still a lack of knowledge about bilingualism patterns in many other ethnic groups in Indonesia, and how contextualized bilingualism in Indonesia relates to sociocultural adjustment, regardless of those three studies about bilingualism in Indonesia which have been done before.

## SOCIOCULTURAL ADJUSTMENT

Previous studies reported that language proficiency contributes significantly to sociocultural adjustment (Mustafa & Ilias, 2013). Language proficiency may also signify a propensity to learn about a second culture (i.e., the national culture in the Indonesian context or host culture in an immigration context), enabling one to have a cultural understanding not otherwise possible (Eschback, Parker, & Stoeberl, 2001). Moreover, individuals with higher language proficiencies were better adapted, partially because they perceived smaller cultural differences and had more contact with the majority culture or with the other dominant ethnic group as well as with their own ethnic group (Selmer, 2006).

Researchers interested in psychological adjustment have examined, mostly among adults, the psychological phases that people go through when dealing with other cultures, the traits

that contribute to adjustment in a new culture, and the process of becoming bicultural (Black & Gregersen, 1991; Kim & Ruben, 1988; Nwanko & Onwumechili, 1991; Searle & Ward, 1990). In the process of becoming bicultural, an adult may go through a process of stress and adjustment that leads to growth in intercultural communication skills over time that are important for communicative adjustment (Cai & Rodriguez, 1996; Kim & Ruben, 1988). In a Dutch study, Turkish–Dutch adults were found to combine the Turkish and the Dutch culture in their own way: they focus more on adaptation in the public domain and more on Turkish cultural maintenance in the private domain, they refer to different aspects of the cultures for the public (functional, utilitarian) and for the private (social emotional, more value-related) domains of life (Arends-Tóth & van de Vijver, 2004). Combining the two acculturation orientations, adopting the mainstream culture and maintaining the ethnic culture, may result in sociocultural competence in the mainstream culture and sociocultural competence in the ethnic culture (Arends-Tóth & van de Vijver, 2004).

Ward and colleagues have argued that adjustment during cross-cultural transitions can be broadly divided into two categories: psychological and sociocultural (Arends-Tóth & Van de Vijver, 2004; Searle & Ward, 1990; Ward & Kennedy, 1996; Ward & Searle, 1991). The former refers to feelings of well-being and satisfaction, whereas the latter is concerned with the competencies to fit in or negotiate interactive aspects of the host culture. Sociocultural adjustment is predicted by, among other things, cultural knowledge, cultural distance, quantity of contact with other groups, cultural integration, and language ability (e.g., Ward & Geeraert, 2016; Ward & Kennedy, 1993, 1996; Yang, Noels, & Saumure, 2006). In the present study, sociocultural adjustment comprises cultural knowledge, cultural distance, quantity of contact with other groups, and cultural integration in *both* the ethnic and Indonesian national culture. It includes social relationships with one's own ethnic group and with other ethnic Indonesian groups, familiarity with social norms, interaction with and knowledge of both the national culture and ethnic culture (Dimitrova, Bender, Chasiotis, & van de Vijver, 2013). In the Indonesian context, national culture may relate to ethnic culture, because ethnic culture has influence in Indonesian culture. For instance, the national garment (batik) is originally from the Javanese culture. In other words, the knowledge of both national and ethnic culture may relate to each other. In the proposed model, we present sociocultural adjustment as one, integrated variable and provide the correlation between national and ethnic sociocultural adjustment of the measure we use.

## PRESENT STUDY

We were interested in (1) mean differences in vocabulary knowledge and language usage in the three Indonesian groups; (2) relationships between these variables.

### Group differences on language vocabulary and usage

Ethnic groups may differ in how much they use Bahasa Indonesia and their ethnic language. We expect differences on language vocabulary, language usage, and sociocultural adjustment between groups. However, it can be assumed that basic Bahasa Indonesia usage in the public area may be similar across groups, because Bahasa Indonesia is the lingua franca, the main written language

(most ethnic languages are not used for writing), and the main language for publications and correspondence in Indonesia (see Abtahian, et al., 2016; Sari et al., 2018a, 2018b). Based on literature discussed above, we tested the following hypotheses:

1. Javanese and Toraja score higher on their ethnic language vocabulary, ethnic language usage at home as well as in public compared to the Chinese.

2. There are no differences in Bahasa Indonesia usage in public, but that there are differences in Bahasa Indonesia usage at home. Chinese are expected to use Bahasa Indonesia at home more than Javanese and Toraja.

## Mediation model: Language vocabulary as mediator

Language skills may influence sociocultural adjustment (Mustafa & Ilias, 2013; Ward & Kennedy, 1993). In the present study, we took usage as predictor of proficiency, not only because 'practice makes perfect' but also because usage could be a proxy for exposure to the language spoken by others, which in turn could be related to increased proficiency. So, language usage is used here as a background characteristic. A longitudinal study among young children with an average age of 5 years and from Chinese immigrant families in the US showed that parental support of ethnic language usage at home showed positive associations with children's heritage/ethnic language skill development (Park, Tsai, Liu, & Lau, 2012). A study among immigrants and sojourners has also shown that children internalize both mainstream and ethnic language better when cultural guidelines are given at home (Downie et al., 2007). Hence, language usage at home may predict ethnic language knowledge of adolescents. Based on those previous findings, we investigate whether both language usage and language proficiency, the latter reflected by language vocabulary knowledge of both national and ethnic language, are related to sociocultural adjustment. Moreover, previous study showed that different aspects of languages are relevant in multicultural Indonesia: language usage at home, language usage in public, and language skill (the three aspects involve both the ethnic language and Bahasa Indonesia). These domains may or may not be related to each other (Sari et al., 2018b). How each domain of bilingualism relates to sociocultural adjustment is not known, and therefore needs further investigation. In the present study we propose a mediation model including each domain of bilingualism; language skill which is measured by language vocabulary is predicted by language usage at home and in public, and mediates the relation between language usage and sociocultural adjustment (see Figure 1).

Existing findings lead us to expect that also in the Indonesian context, language ability may mediate the relation between language usage and sociocultural adjustment (Downie et al., 2007; Jia et al., 2002; Mustafa & Ilias, 2013; Park et al., 2012; Ward & Kennedy, 1993). We propose a mediation model with sociocultural adjustment as outcome variable in which the relation between national language (Bahasa Indonesia) usage and sociocultural adjustment is mediated by Bahasa Indonesia vocabulary. Similarly, we test whether the relation of ethnic language usage to sociocultural adjustment is mediated by ethnic language vocabulary (see Figure 1). We expect that the model applies to all groups. We also expect that Bahasa Indonesia usage at home will correlate positively with Bahasa Indonesia usage in the public area, ethnic language usage at home will correlate

positively with ethnic language usage in the public area, language vocabulary of Bahasa Indonesia will correlate positively with ethnic language vocabulary, but ethnic language usage at home will correlate negatively with Bahasa Indonesia usage at home across groups (see Figure 1).



## METHOD

### Participants

Participants were 517 adolescents: 214 Javanese respondents, 108 Toraja respondents, and 195 Chinese respondents (see Table 1). They attended secondary schools in Toraja Utara (South Sulawesi), Malang (East Java), Semarang, Solo, and Jogjakarta (Central Java). All Toraja respondents lived in Tana Toraja in the north region called Toraja Utara (South Sulawesi), all Javanese respondents lived in Central Java, and Chinese participants were from Central Java, East Java, and Special Province of Jakarta in Java. The age of the respondents was between 12 and 19 years ($M_{age}$ = 14.33 years), which means that all participants were born after the Soeharto regime; 46.20% of the respondents were males (see Table 1).

## MEASURES

### Demographic characteristics

We asked information about the participant's age, gender, ethnicity, and parental level of education. Father's and mother's level of education were coded into seven scores: 1 for elementary school, 2 for junior high school, 3 for high school, 4 for some college, 5 for college, 6 for some graduate school, and 7 for master degree and above (see Table 1). The median parental educational level was upper secondary/high school (between 9-12 years of education).

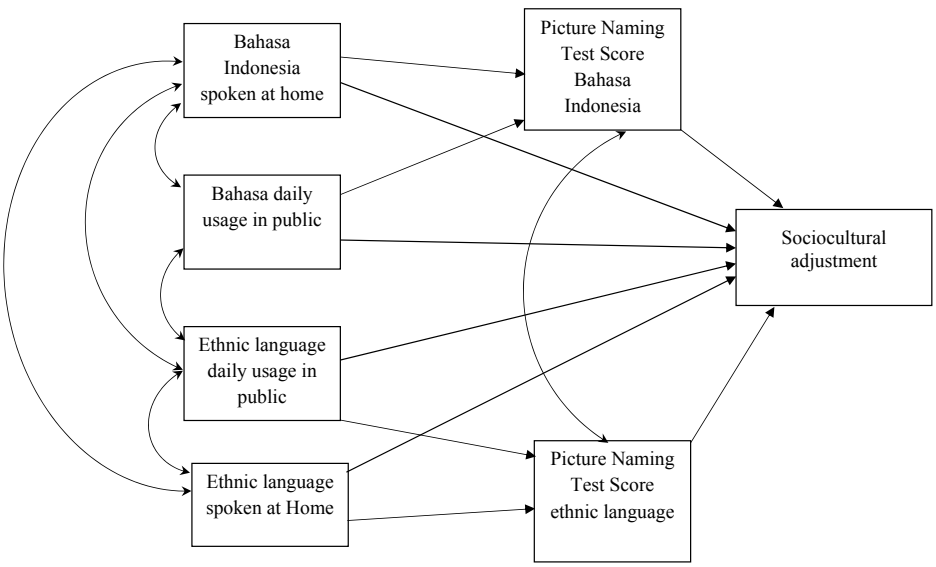


**Figure 1. Theoretical Model**

**Table 1.** Sample Characteristics

| | Javanese (*N* = 214) | Chinese (*N* = 195) | Toraja (*N* = 108) | Total (*N* = 517) |
|---|---|---|---|---|
| Male (%) | 55.14 | 51.25 | 25.93 | 46.20 |
| Age Mean (*SD*) | 15.26 (1.43) | 13.68 (1.32) | 13.65 (.77) | 14.57 (1.53) |
| Father's education (%) | | | | |
| 1 = elementary | 20.56 | 1.03 | 6.48 | 10.28 |
| 2 = some high school | 12.15 | 6.67 | 12.04 | 9.34 |
| 3 = high school | 44.86 | 33.33 | 42.59 | 41.46 |
| 4 = college | 1.87 | 5.64 | 5.56 | 3.48 |
| 5 = some graduate | 11.68 | 22.05 | 26.85 | 16.46 |
| 6 = master | 5.14 | 24.62 | 6.85 | 15.03 |
| 7 = Ph.D. & above | 3.74 | 6.67 | 0 | 3.95 |
| Mean level (*SD*) | 3.03 (1.59) | 4.43 (1.55) | 3.54 (1.35) | 3.68 (1.67) |
| Mother's education (%) | | | | |
| 1 = elementary | 23.83 | 1.54 | 10.19 | 12.50 |
| 2 = some high school | 17.76 | 5.13 | 11.11 | 11.23 |
| 3 = high school | 35.05 | 26.67 | 45.37 | 35.28 |
| 4 = college | 7.48 | 5.64 | 8.33 | 5.70 |
| 5 = university | 9.35 | 27.69 | 22.22 | 17.25 |
| 6 = master | 5.61 | 30.26 | 2.78 | 15.98 |
| 7 = Ph.D. & above | .93 | 3.07 | 0 | 2.06 |
| Mean level (*SD*) | 2.81 (1.49) | 4.56 (1.45) | 3.30 (1.29) | 3.60 (1.67) |

## Bahasa Indonesia and Ethnic Language Usage at Home Questionnaire

Regarding the language spoken at home, the information obtained was about the four directions of language interaction between the parents and adolescent: mother's language when talking with the adolescent, father's language when talking with the adolescent, adolescent's language when talking with the mother, and adolescent's language when talking with the father were assessed (Han, 2010; Han & Huang, 2010). Sample items are "Mother speaks Bahasa Indonesia to you" and "You speak Bahasa Indonesia to your father". There were one national (Bahasa Indonesia) and three ethnic languages spoken by the three ethnic groups in this study: Javanese, Toraja, and Mandarin (Chinese). Categories of language use frequency were: never, sometimes, often, or very often. Internal consistencies were high, both for Bahasa Indonesia ($\alpha_{Javanese}$ = .94, $\alpha_{Toraja}$ = .91, $\alpha_{Chinese}$ = .88) and the ethnic languages ($\alpha_{Javanese}$ = .92, $\alpha_{Toraja}$ = .91, $\alpha_{Chinese}$ = .89).

## Picture Naming Test (PNT)

The test of vocabulary (Kharkurin, 2012) consists of 120 pictures prompting respondents to name each object on the picture (such as "chair", "pencil", and "mouse"). A correct answer is scored as 1 and a wrong answer is scored 0, with the highest possible total score being 120. A higher score is interpreted as a better knowledge of the language's lexicon. The test was administered

both in Bahasa Indonesia ($\alpha_{Javanese}$ = .93, $\alpha_{Toraja}$ = .84, $\alpha_{Chinese}$ = .92) and the three ethnic languages ($\alpha_{Javanese}$ = .92, $\alpha_{Toraja}$ = .97, $\alpha_{Chinese}$ = 1.00).

### Sociocultural Adjustment

To measure sociocultural adjustment, a scale by Dimitrova and colleagues (Dimitrova et al., 2013) was adapted. The scale consists of 66 items for the two cultures (33 items per culture). Participants were asked to indicate the degree of difficulty they experience in daily situations. Examples of items are "Asking advice of <names of own and other ethnic groups appeared here; one ethnicity per item> friends", "Making yourself understood by <names of own and other ethnic groups appeared here> people" and "Understanding jokes and humor of <names of own and other ethnic groups appeared here>". Responses were given on a 5-point scale ranging from 1 = *very difficult*, to 5 = *very easy*. Internal consistencies were high ($\alpha_{Javanese}$ = .97, $\alpha_{Toraja}$ = .92, $\alpha_{Chinese}$ = .97).

### Language usage in public area/media

We prompted participants to report how they used Bahasa Indonesia ($\alpha_{Javanese}$ = .80, $\alpha_{Toraja}$ = .90, $\alpha_{Chinese}$ = .85) and their ethnic language ($\alpha_{Javanese}$ = .90, $\alpha_{Toraja}$ = .95, $\alpha_{Chinese}$ = .95) in such areas as listening to radio, watching TV, and communicating with friends. Sample item such as "From scale 1 to 10 how much Bahasa Indonesia /ethnic language you use daily with your friends" and "From scale 1 to 10 how much Bahasa Indonesia /ethnic language you use daily for studying/learning". The 10 items for each language of this questionnaire are part of the Language Experience and Proficiency Questionnaire (LEAP-Q) by Marian, Blumenfeld, and Kaushanskaya (2007).

## PROCEDURE

The first author, with assistance of Sanata Dharma University (USD) in Jogjakarta (Java), *Sekolah Tinggi Theologi* (Institute of Theology) Jaffray in Makassar (South Sulawesi) in Toraja, and *Sekolah Tinggi Theologi* (Institute of Theology) SAAT in Malang (East Java), contacted the schools in Rantepao (Toraja Utara), South Sulawesi, and the schools in Malang, Solo, and Jogjakarta (Java). The first author and research assistants came to the schools to get the consents from the schools, teachers, parents, and respondents. Instruments were administered in the class during school hours. All questionnaires were translated from English into Bahasa Indonesia and back translated (Van de Vijver & Leung, 1997) with the help of language teachers (English teacher and Bahasa Indonesia teacher) in Indonesia. All instruments were administered in Bahasa Indonesia, with the exception of the ethnic language versions of the PNT. The participants filled in the questionnaires in the class in their school, supervised by the teachers, the first author, and research assistants who were students recruited from the Faculty of Psychology at Sanata Dharma University (USD) and Magister of Applied Psychology Gadjah Mada University in Jogjakarta, and Master of Counseling Program Department of Institute of Theology Jaffray and Institute of Theology SAAT. These eight research assistants received training from the first author. They were native speakers of the ethnic language and scored the answers of the Picture Naming Test (Kharkurin, 2012). The list of correct answers

of the Picture Naming Test of each language was provided by the help of language teachers (two teachers per ethnic language/Bahasa Indonesia who prepared the list).

## RESULTS

We first confirmed that missing scores (less than 9% in all variables) were missing completely at random (MCAR) (MCAR test: $\chi^2(1418) = 1122.05$, $p = 1.00$). Then, missing scores of the language usage at home, language usage in public, language vocabulary, and sociocultural adjustment were replaced with imputed values using an EM algorithm.

### Group Differences in Language Vocabulary and Usage

As can be seen in Table 2, *post hoc* tests of a MANOVA showed that Javanese scored higher on ethnic vocabulary, ethnic language usage at home, and ethnic language usage in public area compared to the other two ethnic groups. As expected, Chinese scored lower on ethnic vocabulary, ethnic language usage at home, and ethnic language usage in public than the two other groups ($p < .01$, see Table 2). Javanese used Bahasa Indonesia at home less than the other two groups; there was no difference on Bahasa Indonesia vocabulary between Javanese and Chinese; Chinese spoke Bahasa Indonesia at home the most, and Toraja used Bahasa Indonesia in public the most and scored higher on Bahasa Indonesia vocabulary. Hence, hypotheses 1a and 1b regarding the group differences are partly supported. As expected, Javanese and Toraja scored higher on ethnic language skill and usage than Chinese. Also in line with expectation, Chinese spoke Bahasa Indonesia the most at home. However, contrary to our expectation, Chinese reported that they used Bahasa Indonesia in public less than Toraja and scored lower on Bahasa Indonesia vocabulary than Toraja.

### Multigroup Path Analysis

Prior to testing the conceptual model of Figure 1, we examined the link of background variables, notably parental education and participant age, with all variables of the conceptual model.

**Table 2.** Descriptive Statistics and *Post Hoc* Results

| | **Javanese (1)** ***N*** = 214 ***M*** (***SD***) | **Toraja (2)** ***N*** = 108 ***M*** (***SD***) | **Chinese (3)** ***N*** = 195 ***M*** (***SD***) | **Total** ***N*** = 517 ***M*** (***SD***) | ***Post hoc* test** ***p* of *M* difference between group 1&2, 1&3, 2&3** |
|---|---|---|---|---|---|
| PNT Bahasa | $92.97_{a}$ (14.28) | $101.61_{b}$ (7.88) | $94.89_{a}$ (12.57) | 94.41 (13.04) | <.001, .15, <.001 |
| PNT Ethnic language | $75.77_{a}$ (16.31) | $64.10_{b}$ (27.32) | $12.02_{c}$ (27.32) | 45.58 (36.05) | <.001, <.001, <.001 |
| Bahasa usage at home | $8.86_{a}$ (3.47) | $11.47_{b}$ (3.13) | $13.74_{c}$ (2.59) | 11.25 (3.76) | <.001, <.001, <.001 |
| Ethnic language usage at home | $12.08_{a}$ (3.07) | $10.96_{b}$ (3.09) | $7.71_{c}$ (2.98) | 10.32 (3.78) | <.01, <.001, <.001 |
| Bahasa daily usage in public life | $74.23\ (12.51)_{a,b}$ | $77.64_{a}$ (15.24) | $72.44_{b}$ (15.79) | 73.69 (16.84) | .13, .14, <.01 |
| Ethnic language daily usage in public life | $64.49_{a}$ (17.10) | $55.95_{b}$ (24.48) | $47.78_{c}$ (28.10) | 57.03 (24.44) | <.01, <.001, <.001 |
| Sociocultural Adjustment | 238.71 (43.90) | 236.23 (54.34) | 238.07 (46.20) | 237.83 (47.51) | .07, .46, .05 |

*Note:* Means of scales with a different subscript were significant in a *post hoc* test (Least Significant Difference) , $p < .05$. Ethnic languages are Javanese language (Javanese), Toraja language (Toraja), and Mandarin (Chinese)

Regression analyses were conducted, using mother's education level, father's education level, and age as independent variables for each psychological scale separately, which yielded the following results: there were relations between mother's education level, father's education level, and age with Bahasa Indonesia vocabulary ($F(3, 513) = 4.82$, $p = .003$, $R^2 = .03$), ethnic language vocabulary ($F(3, 513) = 39.42$, $p < .001$, $R^2 = .19$), Bahasa Indonesia usage in public area ($F(3, 513) = .09$, $p = .97$, $R^2 = .00$), ethnic language usage in public area ($F(3, 513) = 10.99$, $p < .001$, $R^2 = .06$), Bahasa Indonesia usage at home ($F(3, 513) = 59.29$, $p < .001$, $R^2 = .26$), ethnic language at home ($F(3, 513) = 40.15$, $p < .001$, $R^2 = .19$), and sociocultural adjustment ($F(3, 513) = 7.31$, $p < .001$, $R^2 = .04$). Age showed a significant, positive association with ethnic language vocabulary ($\beta = .26$, $t = 6.38$, $p < .001$), ethnic language at home ($\beta = .09$, $t = 2.24$, $p = .03$), and sociocultural adjustment ($\beta = .16$, $t = 3.58$, $p < .001$). Father's education level showed a positive association with Bahasa Indonesia usage at home ($\beta = .20$, $t = 3.95$, $p < .001$), and a negative association with ethnic language usage at home ($\beta = -.12$, $t = -2.37$, $p = .02$). Mother's education level was significantly associated with ethnic language vocabulary ($\beta = -.28$, $t = -5.35$, $p < .001$), ethnic language usage in public area ($\beta = -.19$, $t = -3.32$, $p < .001$), ethnic language usage at home ($\beta = -.31$, $t = -5.97$, $p < .001$), Bahasa Indonesia usage at home ($\beta = .34$, $t = 6.81$, $p < .001$), and sociocultural adjustment ($\beta = .16$, $t = 2.79$, $p < .01$). To ensure that means can be compared without confounding background factors, we used the standardized residual scores of language usage, language vocabulary, sociocultural adjustment in the analyses controlling for age as well as father's and mother's education level.

In addition, we examined the correlations between the two subscales of sociocultural adjustment scale, national and ethnic culture. The results showed that there were substantial, positive correlations ($r_{Javanese} = .75$, $p < .001$; $r_{Toraja} = .59$, $p < .001$; $r_{Chinese} = .74$, $p < .001$). Such a strong, positive correlation is not usual in acculturation research in an immigration context (e.g., Dimitrova et al., 2013). The strong correlation may be due to the Indonesian context where being a member of an ethnic and a national culture is a natural combination and there is no public discourse against combining these identities. Being Javanese automatically means being Indonesian because Javanese is a subgroup of Indonesia, and Indonesia as a group consists of many ethnic groups. This is different from a migration context where sociocultural adjustment to the two cultures often shows a much weaker or even negative association (e.g., Dimitrova et al., 2013). Given the strong correlations between the two subscales of sociocultural adjustment, we did not separate the two subscales in the multigroup path analyses.

In order to test whether relations between variables are similar across Javanese, Toraja, and Chinese, a multigroup path analysis was computed to test the applicability of the theoretical model depicted in Figure 1. We considered relations between variables as well as differences between different ethnic groups. Referring to a previous study (Sari et al., 2018b), the background variables of bilingualism were actually different domains (language vocabulary, self-reported proficiency, and self-reported usage), and each domain may score differently from each other and not necessarily correlated significantly with each other. The correlations between each domain of each language and between two languages were complicated. SEM allows for ease of interpretation and estimation. SEM simplifies testing of mediation hypotheses for multiple groups because it is designed, in part, to test these more complicated mediation models in a single analysis (e.g., Bou

& Satorra, 2010; Imai, Keele, & Tingley, 2010; Preacher, Zyphur, & Zhang, 2010). SEM can be used when extending a mediation process to multiple independent variables, mediators, or outcomes. The direct effect is the pathway from the exogenous variable to the outcome while controlling for the mediator. Full mediation (i.e., the intervention has no direct effect on the outcome) corresponds to the null hypothesis. If this null is rejected, it becomes of interest to assess partial mediation via the direct, indirect, and total effects. Inference (standard errors and *p* values) about such effects is performed using bootstrapping methods. The model in Figure 1 did not show a very good fit (see Table 3 for results). Preliminary analyses revealed the need to make two changes in the model. Bahasa Indonesia vocabulary knowledge was unrelated to any antecedent variable. This absence could suggest that Bahasa Indonesia knowledge is more under the influence of education. The importance of Bahasa Indonesia is so widely shared by these adolescents that it is not strongly related to the antecedents we measured. The other change was that ethnic language vocabulary was influenced by more variables than anticipated. So, we removed the arrows from the exogenous variables to Bahasa Indonesia knowledge and linked all exogenous variables to ethnic language knowledge. The modified model showed that the exogenous variables related more to ethnic language skill, but exogenous variables did not relate to Bahasa Indonesia skill (Figure 2 and Table 3). The modified model of Figure 2 had a better fit and showed that Bahasa Indonesia usage in public and at home did not relate to Bahasa Indonesia vocabulary, but to vocabulary of ethnic language (see Table 3 and Figure 2).

We tested the invariance of the model across groups. The most restrictive model with a good fit was the structural weights model (with $p$ >.01, RMSEA[a] of 0.6, CFI >.90, AGFI >.90), which is a model with regression weights that are identical across groups. The correlations between Bahasa Indonesia vocabulary and ethnic language vocabulary, between Bahasa Indonesia usage at home and ethnic language usage in public area varied between groups, but the correlations between Bahasa Indonesia usage at home and ethnic language usage at home, between Bahasa Indonesia usage in public area and ethnic language usage in public area, between Bahasa Indonesia usage at home and in public area were similar between groups (see Figure 2). Ethnic language usage at home correlated negatively with Bahasa Indonesia usage at home in all groups, language vocabulary of Bahasa Indonesia and ethnic language were correlated positively among Javanese and Chinese,

**Table 3.** Fit Indices of Path Model

| | $\chi^2$ (*df*) / *p* | TLI | CFI | AGFI | RMSEA[a] |
|---|---|---|---|---|---|
| Figure 1: | | | | | |
| Unconstrained | 42.75 (15) / .00 | .67 | .92 | .88 | .06 [.04, .08] |
| Structural weights | 57.80 (35) / .01 | .88 | .94 | .93 | .04 [.02, .05] |
| Structural covariances | 166.48 (53) / .00 | .61 | .68 | .88 | .07 [.05, .08] |
| Figure 2: | | | | | |
| Unconstrained | 30.19 (21) / .09 | .92 | .97 | .94 | .03 [.00, .05] |
| Structural weights | 54.46 (39) / .05 | .93 | .96 | .94 | .03 [.00, .04] |
| Structural covariances | 204.19 (57) / .00 | .53 | .58 | .86 | .07 [.06, .08] |

*Note:* Numbers between brackets refer to the 90% confidence interval.

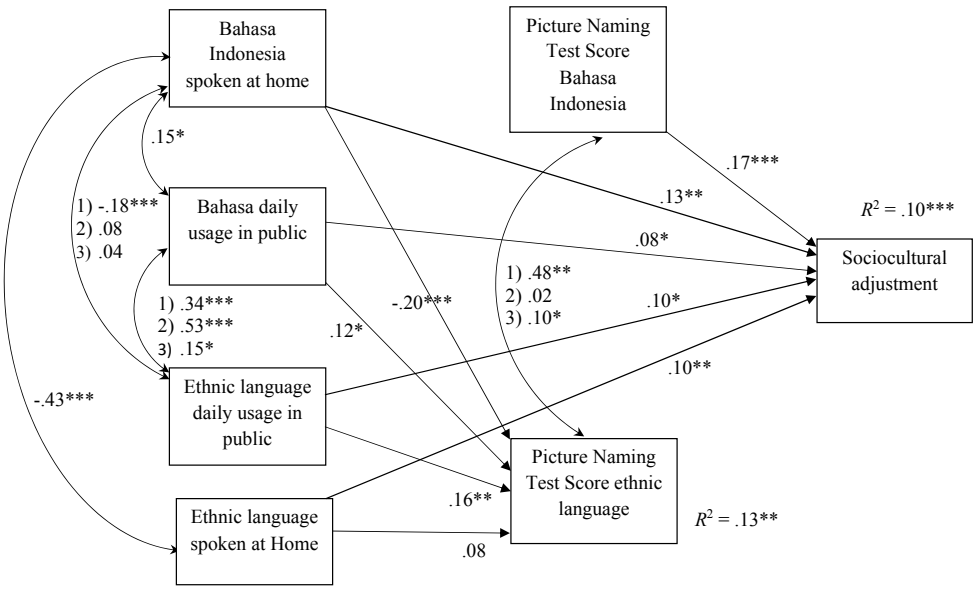


**Figure 2. Structural Weights Model.** *$p$ < .05. **$p$ ≤ .01, ***$p$ < .00.1. 1) Javanese, 2) Toraja, 3) Chinese

Bahasa Indonesia usage at home and Bahasa Indonesia usage in public area were correlated positively in all groups, and ethnic language usage in public area correlated positively with Bahasa Indonesia usage in public area in all groups (see Figure 2). Finally, bootstrapping analyses showed that no mediation effects were significant.

To conclude, we found that language-related background variables were positively related to sociocultural adjustment, although the path coefficients tended to be rather weak; vocabulary knowledge showed a link with sociocultural adjustment only for Bahasa Indonesia. It may be caused by the language shift going on in Indonesia, that Bahasa Indonesia has become more dominant than ethnic language for most ethnic groups in Indonesia (Abtahian, et al., 2016; Sari et al., 2018b). Knowledge of the ethnic language is positively predicted by usage of the language at home and in public, but the link of ethnic language knowledge with speaking Bahasa Indonesia at home and in public is complex. If much Bahasa Indonesia is spoken at home, ethnic language knowledge tends to be lower, but when more Bahasa Indonesia is spoken in public, ethnic language knowledge tends to be higher. Such a difference is also found between the background variables; participants who report to speak more Bahasa Indonesia at home report to speak less ethnic language at home. This seemingly obvious pattern of negative correlations is not found for language usage in public; in each group there is a positive association between the two languages spoken in public.

## DISCUSSION

Our findings on sociocultural adjustment in sedentary ethnic groups extend previous research in Western immigration contexts, in which the national language is usually the dominant language of the majority group, by confirming associations between language usage and sociocultural

adjustment (e.g., Dimitrova et al., 2013; Genesee, 1987; Hakuta, 1987; Taylor et al., 1977). Our results show that in all groups, usage of both languages is important for sociocultural adjustment and skill in the country's lingua franca is more important than ethnic language skill for sociocultural adjustment among both dominant and non-dominant groups (all of which are minority groups in Indonesia). The result that Bahasa Indonesia as a lingua franca is positively associated with sociocultural adjustment is similar to findings obtained in an immigration context.

However, differently from an immigration context, the correlation between the two subscales of sociocultural adjustment scale, national and ethnic culture, is strong. In the Indonesian context, being Javanese or Toraja also means being Indonesian, which requires everyone to be fluent in Bahasa Indonesia. It is telling that in each group the vocabulary knowledge scores were much higher for the Bahasa Indonesia test than for the ethnic language test. The lingua franca has become the de facto dominant language of the country, showing a language shift going on in Indonesia (see also Abtahian, et al., 2016; Sari et al., 2018b). The strong positive correlation between sociocultural adjustment in the ethnic and national domains is uncommon in acculturation studies (e.g., Dimitrova et al., 2013). The strong correlation may be a consequence of the specific linguistic and cultural situation in Indonesia where all students get a thorough training in the national language and speaking the language is more a necessity than a choice. For these students, adjustment seems to imply adjustment to a context that is inherently bicultural and bilingual. As a consequence, the opposition between the two types of adjustment (national and ethnic) that is sometimes found in acculturation studies among immigrants in Western countries does not seem to exist in these Indonesian adolescents. It is interesting to note that in this Indonesian context ethnic language skill is linked to language-related background factors we measured (usage of the ethnic and national language in private and public spheres), whereas Bahasa Indonesia skill is not so much under control of background factors. This observation confirms previous findings that Bahasa Indonesia is becoming the dominant language for most ethnic groups in Indonesia (Abtahian et al., 2016; Sari et al., 2018b).

It is noteworthy that the Javanese and Toraja group combined high levels of proficiency in both the ethnic and national language (Javanese scored highest on ethnic language vocabulary, and Toraja scored highest on Bahasa Indonesia vocabulary), and Chinese scored lowest on ethnic language vocabulary and ethnic language usage, but scored highest on Bahasa Indonesia usage at home. Historical considerations may play an important role here. Chinese who are regarded as descendants of migrants (only 1-5% in the whole country) were prohibited from speaking their own ethnic language in the latter half of the previous century and started to be able to learn the Chinese language in schools rather recently (Suryadinata, 2003). In addition, there is a historical factor that is specific for the Chinese group in Java. In Java (where we sampled our Chinese participants), most Chinese are from the upper class (*peranakan*). The Toraja make up less than 10% of the population in South Sulawesi, hence, it is necessary to be fluent in Bahasa Indonesia to be able to communicate with the other ethnic groups in the area. Yet, the group also has a strong ethnic orientation. So, it is very important for them to maintain the ethnic heritage language, although their group size is small, which may limit the number of people with whom they can speak their language. That is likely why Toraja have a higher skill in Bahasa Indonesia and a lower skill in ethnic language

compared to Javanese, and the minority Toraja ethnic language is still relatively well maintained, whereas maintenance of the ethnic language among the minority Chinese is limited.

Our data tell a novel story about the role of language usage and language proficiency in a multilingual country with a clear, dominant language used in education, media and large parts of public life (Bahasa Indonesia in our study). Similar to previous studies which have shown that language proficiency contributes significantly to sociocultural adjustment (Jia et al., 2002; Mustafa & Ilias, 2013; Ward & Kennedy, 1993), language proficiency, assessed here as vocabulary, is correlated with sociocultural adjustment (see Figure 2), but we add new information that the relationships between language usage at home and in public with language proficiency of two languages are different from what is commonly found in immigration studies. Bilingualism usage and knowledge is contextualized depending on the cultural context (group size, political background, and geographical area). Our study also confirms that there is a language shift going on in Indonesia across different ethnic groups, that Bahasa Indonesia as national language has become the dominant language (see Abtahian et al., 2016).

## LIMITATIONS

We showed that the usage and performance of Bahasa Indonesia and ethnic language usage relate to sociocultural adjustment, but it is important to note that this study is correlational and cross-sectional, and that we cannot demonstrate causality. Another limitation is that it is possible that social desirability or other response styles influenced the scores. Further, we only studied a selection of languages, although we chose languages and ethnic groups such as dominant Javanese, non-dominant Toraja and Chinese, that differed in meaningful ways in terms of their status in Indonesia and their history. It is also important to note that not all ethnic languages are taught in schools which made it difficult to find experts and teachers in the respective language, especially regarding the Toraja language in South Sulawesi (South Sulawesi is a less developed island compared to Java). Since there are only few studies done in the Indonesian context, a replication with different ethnic groups in Indonesia is needed, especially to examine the correlation pattern between Bahasa Indonesia and the background factors. Finally, while the PNT can be expected to provide some insight into language knowledge, actual language use has more components, such as speaking and grammar. More studies are needed to provide information about how the PNT relates to more objective language tests, and more diverse assessments of daily language use (e.g., via experience sampling methods, or ratings of others) that would allow for a triangulation of the data obtained via different avenues.

## CONCLUSION

Our study goes beyond findings of sociocultural adjustment among adults in immigration Western context (Cai & Rodriguez, 1996; Dimitrova et al., 2013; Genesee, 1987; Hakuta, 1987; Jia et al., 2002; Mustafa & Ilias, 2013; Taylor et al., 1977; Ward & Kennedy, 1993). The novel findings of this study show that regardless the differences on language knowledge and usage between three ethnic groups in Indonesia; both national language and ethnic language usage and knowledge are associated with

sociocultural adjustment in all groups in the same manner, but the relationships between usage and knowledge of two languages differ suggesting that language usage and language knowledge are different facets of bilingualism. It is remarkable that even though we found substantial group differences in ethnic language vocabulary, the correlations between both ethnic language usage at home and in public with sociocultural adjustment are the same across groups. Bahasa Indonesia is not only the lingua franca and the dominant language which confirms that there is language shift going on in Indonesia with Bahasa Indonesia becomes more dominant across ethnic groups (Abtahian et al., 2016, Sari et al., 2018b). Whereas Bahasa Indonesia was actually the second language for *all* groups, including the dominant group in the past. This differs markedly from Western immigration contexts, where the ethnic language of the majority group is typically the lingua franca. More studies on the relation between language vocabulary and sociocultural adjustment in different multicultural countries are needed to understand how bilingualism is contextualized and whether the differences on bilingualism among groups are caused by factors like generational differences and ethnic hierarchy (e.g. Chinese of different generations with generations of other ethnic groups). The findings showed that the same relation between language usage and sociocultural adjustment is found across contexts, but the relation between language knowledge and sociocultural adjustment, and the relation between language usage in public, language usage at home, and language knowledge may show cultural specificity.

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# CHAPTER 4

## WE FEEL BETTER WHEN WE SPEAK COMMON LANGUAGE - AFFECTIVE WELL-BEING IN BILINGUAL ADOLESCENTS FROM THREE ETHNIC GROUPS IN INDONESIA

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## ABSTRACT

This study investigated how bilingual and bicultural adolescents use their languages and how this relates to affective well-being in Indonesia, a non-Western, multicultural context. The samples consisted of 132 Javanese, 109 Toraja, and 100 Chinese ($M_{age}$ = 14.02 years). We tested a mediation model in which language usage is linked to affective well-being directly and indirectly through vocabulary knowledge. Although we found group differences in mean scores in vocabulary, usage, and age of language acquisition, the relationships between knowledge and usage of languages with affective well-being are identical across groups. The national language usage was positively related to affective well-being, but ethnic language usage was not related to affective well-being. This study shows that bilingualism patterns may differ depending on the context, but regardless of the differences, bilingualism matters for affective well-being across different ethnic contexts in Indonesia. However, different from the immigration context studied in much Western research, the lingua franca is relevant in the adolescents' affective well-being for all groups in Indonesia including the dominant group. Therefore, when we look at each aspect of bilingualism; language usage at home, language usage in public, and language knowledge, each aspect relates differently to affective well-being depending on the context. We conclude that in Indonesia, a context characterized by an integration of one national and multiple ethnic cultures with similar standings, the shared lingua franca is more important than the ethnic language, and language usage is more important than language vocabulary for affective well-being.

Keywords: well-being, non-immigrant, language usage, vocabulary, adolescents, lingua franca, Indonesia.

Studies have shown that the ability to speak two languages, or bilingualism, relates positively to social well-being (e.g., Chen, Benet-Martinez, & Bond, 2008; Han, 2009; Han & Huang, 2010). It is unclear, however, (a) how different aspects of bilingualism (usage and competence) relate to well-being and (b) whether the degree of language competence may modulate a relation between using a language and reaping well-being benefits associated with that. A longitudinal study among children in the US showed that the socioemotional well-being of bilingual children who spoke a non-English language was similar to the socioemotional well-being of monolingual children, whereas the bilingual children who were equally fluent in both languages and the non-dominant-English bilingual children surpassed the monolingual children in their socioemotional outcomes (Han, 2009). This study measured both language usage and fluency, but did not investigate whether language usage and fluency related to children's well-being in similar or different ways. It has been reported that ethnic language usage at home (e.g., Park, Tsai, Liu, & Lau, 2012) and language competence (e.g., Han, 2009; Han & Huang, 2010; Tran, 1995) relate positively to well-being but in what manner language usage and competence relate to well-being is much less known. A study among adult Hispanic bilinguals in the US showed that English ability (dominant language) had stronger correlations with well-being than the Spanish ability (ethnic language), and English ability related to Spanish language ability (Tran, 1995). However, there was lack of discussion on how bilingualism comprised both ability and usage and that language ability may relate differently from language usage to well-being. Therefore, we set out to investigate whether different aspects of bilingualism (language usage at home, in public, and language competence) relate similarly or differently to well-being, and whether the relation between language usage and well-being is mediated by language competence.

Many studies of bilingualism were conducted among immigrants in contexts with a single dominant language and culture. Indonesia provides a different context of bilingualism because almost everyone is bilingual, and Indonesia does not have a majority group, since the biggest dominant group (Javanese) is only 40% of the total population (Suryadinata, Arifin, & Ananta, 2003), whereas in most immigration contexts the largest, dominant group comprises more than 50% of the total country population. Moreover, the lingua franca of the country is the native tongue of only a very small part of the population. So, the lingua franca is almost everyone's second (or third) language. Finally, most studies on bilingualism were conducted in Western contexts or among students and adults (e.g., Chen et al., 2008), and did not address younger groups. Only around 12% of the research focus on youth and adolescence - and most of this research was conducted in Western, educated, industrialized, rich, democratic (WEIRD) societies (Celenk & van de Vijver, 2011; Henrich, Heine, & Norenzayan, 2010; Nielsen, Haun, Kärtner, & Legare, 2017). Our study focused on adolescents in a non-Western society.

Studies in Asia among migrant adults found a relation between bilingualism and well-being (e.g., Hong, Morris, Chiu, & Benet-Martínez, 2000), but the result of a study among Indonesian adolescents was different from results typically found in immigration contexts, such that language usage at home did not relate to well-being (Sari, Chasiotis, van de Vijver, & Bender, 2018a). Hence, we want to go beyond previous research, by looking at various aspects of bilingualism to investigate the relation between bilingualism and well-being, in the context where the dominant

group is also bilingual. Bilingualism could be an important source of well-being for adolescents even when the adolescent never migrated to another country or culture (Sari et al., 2018a). However, aside from this observation, we still have limited knowledge on how and in what manner language usage and language knowledge relate to bilingual adolescents' well-being, and whether language knowledge mediates the relation between language usage and well-being or not both in non-immigration and immigration contexts. Therefore, we examined whether bilingualism, both usage and knowledge of language, related to adolescents' affective well-being and in what manner, how both language usage and knowledge related to each other, and how each related to affective well-being.

Adolescents who live in a multicultural/multilingual context such as Indonesia face many challenges, such as how to deal with differences on cultural practices, language use, and friendship among ethnic groups. They also have to cope with both their ethnic culture and one (or more) cultures around them, which implies that it can be challenging to develop adequate sociocultural adaptation (see Berry, 1997; Ferguson, Borstein, & Pottinger, 2012; Phinney et al., 2001). Adolescents have grown up with parents who carry with them the language, values, and customs from their heritage culture, and on the other hand they have to interact with peers both from their own ethnic group and from other cultures. Most Indonesian adolescents are bilinguals and they often have friends from the same ethnic group and friends from other ethnic groups who speak different ethnic languages and have different habits, even if very few of them come from another country. This unique multicultural context allows for a new perspective on cultural transmission and bilingualism that is not characterized by international migration. However, how bilingualism relates to psychological outcomes has hardly been studied in Indonesia (e.g. Sari et al., 2018a).

Despite the interesting context, few studies addressed bilingualism in Indonesia. Kurniasih's (2006) research in Jogjakarta (Java) addressed patterns of language use of two Javanese children (11 and 14 years old) at home and at school, as well as the language use of the children's parents when talking to their children and when talking to their social networks. The author found that middle class parents and their child used Bahasa Indonesia much more than working class family members. Some researchers speculate that the introduction of Bahasa Indonesia and the focus on this language in education (Bahasa is by far the most important medium of instruction) has led to a decline of ethnic languages (e.g., Kurniasih, 2006; Musgrave, 2011). A recent sociolinguistic study showed that Bahasa Indonesia is the second language for most, if not all, participants, showing a language shift going on in Indonesia (Abtahian, Cohn, & Pepinsky, 2016). While not made up of representative samples, previous studies showed that Chinese spoke Bahasa Indonesia at home more than Javanese, Batak, and Toraja ethnic groups, and that Javanese spoke Bahasa Indonesia at home the least (Sari et al., 2018a, b). Combining the two languages, a consistent pattern emerged: Toraja and Batak Toba speak both languages regularly at home, whereas in Chinese families more Bahasa was spoken and in Javanese families more Javanese was spoken (Sari et al., 2018b).

We studied three ethnic groups in this study in Indonesia: Chinese, Javanese, and Toraja. Chinese are an ethnic group that is regarded to consist of descendants of immigrants. Javanese, as the largest and politically and economically most dominant ethnic group, and Toraja, as a minority ethnic group, are both regarded to descend from indigenous Indonesians. All groups in this study

have their own ethnic language and ethnic culture. The national language is known as Bahasa Indonesia. We investigate the association between bilingualism and affective well-being, and also how the three ethnic groups differ in their vocabulary knowledge of their ethnic language and Bahasa, when they became fluent in both languages, and how they use both languages in everyday life. We want to study whether the relation between bilingualism and affective well-being remains the same even though there are differences in bilingualism patterns and when the adolescents became fluent in both languages. When the same relation between variables can be found across different ethnic groups in Indonesia, it would mean that no matter how bilingualism is acquired and in what manner bilingualism is performed, bilingualism relates to well-being across different contexts. We expect that the mediation model can be found across different groups in Indonesia, including the dominant Javanese group, and that adolescents would feel better when they use their knowledge of the language to speak a common language.

## INDONESIAN CONTEXT

Indonesia is particularly well-suited to study bilingualism and its relation with well-being, because in addition to the official Indonesian national language that is used in education and formal communication, there are more than 300 ethnic languages used in daily communication (Suryadinata et al., 2003). Most Indonesians are bilingual and bicultural individuals *not* by immigration but by being citizens of a nation state formed by many different ethnic groups (or kingdoms before the colonialization). Having a common language or lingua franca played an important role in uniting the nation: In 1928, the Indonesian youth conference made a pledge of being one nation with one national language, Bahasa Indonesia, which was captured in the country's motto *Bhineka Tunggal Ika* or 'unity in diversity' (Latuconsina & Rafidi, 1996; Nababan, 1985). In specific geographical regions in Indonesia the native ethnic language is the first language in daily conversation or private life. Such regions are characterized by a high presence of ethnic speakers, which facilitates access to the ethnic language (e.g., the Toraja language is spoken in Tana Toraja in South Sulawesi, and the Javanese language is spoken in Central and East Java).

### Javanese

In Central Java, where 98% of its population is Javanese, both Javanese and Indonesian languages are widely spoken (Suryadinata et al., 2003). Javanese is the dominant and biggest ethnic group (but still only around 40% of the Indonesian total population), with most Javanese living in Java. Around 60% of the Indonesian population live in Java as the most populated island. Besides Javanese, there are other smaller ethnic groups in Java such as Sundanese (West Java), Betawi (Jakarta), Madura (East Java), Banten (West Java), and Cirebon (West Java). Most Javanese live in Central Java and East Java (Suryadinata et al., 2003). The Javanese language is spoken by 70% of the population in Java, and their group size and dominance in sociocultural-politics (six of the seven presidents of Indonesia have been Javanese) enables the Javanese to maintain their ethnic language across generations (Suryadinata et al., 2003).

## Chinese

Chinese are regarded as descendants of immigrants (only around 1% in the whole country) and they were prohibited from speaking their own ethnic language during the Soeharto regime who reigned from 1967 till 1998 (Suryadinata et al., 2003). Chinese children have officially only been allowed to acquire the Mandarin language after the fall of Soeharto. The prior prohibition may have arguably led to language loss among the Chinese population in Indonesia. Respondents in this study were born in or after 1998; so, they would have had, in principle, the opportunity to acquire their ethnic language. Moreover, the use of the ethnic language has a socioeconomic component. In Java, where we recruited our participants, there are more Chinese *peranakan* (upper class Chinese) than Chinese *totok* (lower class Chinese). Since the nineteenth century, *peranakan* shifted their language usage in the private domain to the Malay language (now called Bahasa Indonesia) as a marker of their higher social class compared to the *totok*, particularly during Dutch colonialism (Oetomo, 1988). As a consequence, speaking Chinese is more common among *totok* than among *peranakan*. The ethnic language of our Chinese respondents in this study is Mandarin language.

## Toraja

Toraja are also a minority group (only 0.37% of the Indonesian population) and are a group native to Indonesia. They mainly live in Tana Toraja, an area of South Sulawesi (Suryadinata et al., 2003), and are well-known in Indonesia for their ethnic ceremony related to ancient beliefs and culture; *Rambu Solo* (Adams, 2006; Budiman, 2013; Panggara, 2015) is a ceremony to deliver the soul of a deceased to the place of their ancestors called *Puyo,* and the ceremony determines the position of the deceased and maintains the social status of the family. *Rambu Solo* revolves around ancient beliefs and traditions on how to regulate social structure, conflict, and reconciliations, and is an instrument to maintain social dignity and identity among the Toraja (Panggara, 20015). By engaging in *Rambu Solo*, Toraja maintain their language and culture (Adams, 2006; Budiman, 2013). While Toraja culture shares similarities with Javanese, the Javanese language is more broadly used, and the Toraja language is used only in a restricted area in Tana Toraja.

It may be the case that Javanese, the dominant group in Indonesia, are fluent in both languages and use both languages almost equally (e.g., Sari et al., 2018a, b). Toraja may show the same pattern, since both Javanese and Toraja have a strong ethnic orientation and live in an environment where there are many people who speak the same ethnic language. In contrast, Chinese speak their ethnic language much less than Javanese as shown by our previous findings (Sari et al., 2018a, b), and may thus be proficient in Bahasa but not very proficient in their ethnic language. Do these differences in ethnic language usage and social context of different islands influence the relationship between bilingualism and well-being? This is a question we set out to investigate. It is an important aspect of our study that it takes place in a non-Western context in which national and ethnic cultures are highly integrated, there is no dominant majority group, languages coexist, and most people are competent in both the mainstream national language/culture and their ethnic language/culture (see Sari et al., 2018a, b, c). We are particularly focusing on the contextualization of bilingualism in our study, and build on work suggesting that the experience of bilingualism can be different across

cultures (Ramírez-Esparza & García-Sierra, 2014). In our study, we therefore focus both on language competence and usage.

## WELL-BEING AMONG BILINGUALS

Distinct aspects of subjective well-being derived from the findings of some studies in Western countries are life satisfaction, pleasant emotions, and unpleasant emotions (Diener, Ng, Harter, & Arora, 2010; Lucas, Diener, & Suh, 1996). It is necessary to note that SES has been associated with subjective well-being (e.g., Diener, Harter, & Arora, 2010). We therefore need to take into consideration the level of education of parents, which may correlate with the fulfillment of psychological needs of learning and using skills which, in turn, may correlate with subjective well-being. A study among Javanese adolescents in East Java (Malang) showed that better relationships with parents were associated with higher well-being among adolescents (Nayana, 2013). A study among bilingual Latino youths also showed that biculturalism was positively related to self-esteem, ability to socialize in diverse settings, leadership abilities, peer competence, and well-being (Birman, 1998; Szapocznik, Kurtines, & Fernandez, 1980). However, there are very few studies on biculturalism and how bilingualism relates to well-being of adolescents in Asia, especially in Indonesia (e.g., Sari et al., 2018a).

Previous research among bilingual children in the US found that bilingualism related positively to socioemotional well-being (e.g., Han, 2009; Han & Huang, 2010), and also among migrant adults in Hong Kong that language fluency among bilinguals related positively to adjustment and negatively to acculturation stress among adults (Chen, et al., 2008). Hence, both language usage and language fluency relate to the affective aspect of well-being among bilingual children and migrant adults. It is unclear, however, whether the same relation will be found among adolescents in general, or particularly among non-migrating bilingual adolescents in Indonesia.

It is also not yet clear in what manner language usage and knowledge, as different aspects of bilingualism (see Sari et al., 2018b), relate to well-being. It is also not clear whether different aspects of bilingualism relate differently to well-being, and whether one aspect mediates the relation between other aspects of bilingualism to well-being. We previously found that language usage at home did not relate to subjective well-being of adolescents (Sari et al., 2018a). This may be due to the specific assessment of bilingualism – which comprises different dimensions, such as language usage in private, in public, and language knowledge (Sari et al., 2018b). Previously, we only investigated the relation between language usage at home, and we did not include language usage in public and language skill (Sari et al., 2018a). In this study, we go beyond the previous assessment by investigating dimensions of bilingualism more comprehensively: language usage at home, in public, and language skill. Including these aspects will provide a better avenue to understand how the various aspects of bilingualism relate to well-being of bilingual adolescents in Indonesia. We propose a mediation model in the relation between bilingualism and well-being, that language knowledge may mediate the relation between language usage and well-being.

## RELATIONS OF LANGUAGE USAGE AND WELL-BEING THROUGH LANGUAGE COMPETENCE

The next question is whether the relations between bilingualism (language usage and competence) and well-being are the same even though the three groups likely differ in levels of ethnic language usage and proficiency. Do both language usage and language competence relate similarly to well-being among bilingual adolescents or is one language more important than the other?

A person who has to deal with different cultures may experience stress and adjustment that leads to growth in intercultural communication skills over time - and such intercultural communication skills are important for communicative adjustment (Cai & Rodriguez, 1996; Kim & Ruben, 1988). Considering the stress that can be experienced during the process (Cai & Rodriguez, 1996; Kim & Ruben, 1988), we focus on the affective aspects of subjective well-being. Although many of the early studies on bilingualism found that bilingualism could increase stress, anxiety, and depression (e.g., Adler, 1977; Park, 1928; Rudmin, 2003; Stonequist, 1935), later evidence supported that bilingualism could have a positive impact on intellectual development and subjective well-being (e.g., Bialystok, 1999; Tran, 1995).

A longitudinal study (with an average interval of 14.2 months between observations) among young children from Chinese-American families showed that parental support of language usage at home is positively associated with children's language competence development (Park et al., 2012). Language competence could be a mediator between language usage and well-being because language competence has been found to be positively correlated to well-being (Han, 2009; Han & Huang, 2010; Tran, 1995) and also to language usage (e.g., Jia et al., 2002; Piske, MacKay, & Flege., 2001). However, we previously found that language usage at home did not relate directly to well-being (Sari et al., 2018a) - in contrast to typical Western acculturation studies in which ethnic language usage at home was found to be an affirmation of one's ethnic identity, and thereby positively associated with well-being. Hence, there is a gap between these findings. To fill the gap, we set out to test the model that language usage at home and in public relate to well-being via language competence; we argue that competence is psychologically closer to well-being (Han, 2009; Han & Huang, 2010; Tran, 1995) because language usage and language competence are different dimensions of bilingualism and language usage may not be critically important for well-being when most members of the population have very high proficiency levels in the shared language (Sari et al., 2018b). Therefore, language usage at home may predict ethnic language competence of adolescents, which in turn may affect well-being. Language competence in this study is measured by vocabulary knowledge (higher vocabulary scores may reflect the richness of the heritage and shared language used at home).

## PRESENT STUDY

We set out to investigate bilingualism among three different ethnic groups in Indonesia: Javanese and Toraja as minority indigenous ethnic group descendants, and Chinese as minority immigrant descendants. We propose a model detailing how bilingual language usage relates to affective well-being directly and indirectly through language vocabulary across those groups (see Figure 1).

Language vocabulary is a mediator of the relation between language usage and well-being (e.g., Jia et al., 2002; Piske et al., 2001); and we set out to test the model that language usage relates to well-being via language vocabulary. We also examined language dominance in each group by analysing the vocabulary knowledge of each language and the differences of language usage between groups. We expect that regardless of the differences in mean scores between groups, relations between language usage and well-being through language knowledge can be found across groups.

We propose a mediation model with affective well-being as outcome variable in which the relation of national language (Bahasa Indonesia) to affective well-being is mediated by Bahasa Indonesia vocabulary, and in which the relation of ethnic language to well-being is partially mediated by ethnic language vocabulary (see Figure 1). We expect for both languages that language usage is associated with vocabulary knowledge (more usage can be expected to be associated with more competence, assessed in our study by vocabulary). Vocabulary scores are seen here as dependent on language usage (exposure to a more and presumably richer language usage can be expected to increase vocabulary). Competence is expected to be positively related to well-being. In line with much literature, we expect that language usage in a bicultural context is associated with well-being. Given that language usage is not contested in Indonesia, we expect that both ethnic language usage and Bahasa Indonesia usage will be positively linked to well-being. Referring to our previous study (Sari et al., 2018b), the background variables of bilingualism were actually different domains (language skill, self-reported proficiency, and self-reported usage), and each domain may score differently from each other and not necessarily correlated significantly with each other. The correlations between each domain of each language and between two languages were complicated and therefore we could not put the background variables in one or two latent variables in the model.

We also expect associations between language usage variables; we expect a negative relation between ethnic language usage at home and Bahasa Indonesia usage at home, and between ethnic language usage in public areas and Bahasa Indonesia usage at home, a positive relation between Bahasa Indonesia usage in public and usage at home, and ethnic language usage in public and usage at home, Bahasa Indonesia usage at home and Bahasa Indonesia usage in public, and ethnic language usage at home and ethnic language usage in public; as we expect that adolescents may prefer to speak the same language across domains (see Figure 1). A multigroup path analyses (Structural Equation Modeling) which estimates the multiple and interrelated dependencies of multiple groups in a single analysis is conducted to test the proposed model (e.g., Bou & Satorra, 2010; Imai, Keele, & Tingley, 2010; Preacher, Zyphur, & Zhang, 2010).

## METHOD

### Participants

Participants were 341 adolescents (42.52% males); 132 respondents Javanese from Java, 109 respondents from Toraja, South Sulawesi, and 100 Chinese respondents mainly from Java. The age of the respondents varied between 12 and 19 years ($M_{age}$ = 14.02 years; *SD* = 1.47) and they were recruited from junior high and high schools in urban areas. The median of the parental educational level was high school (see Table 1).

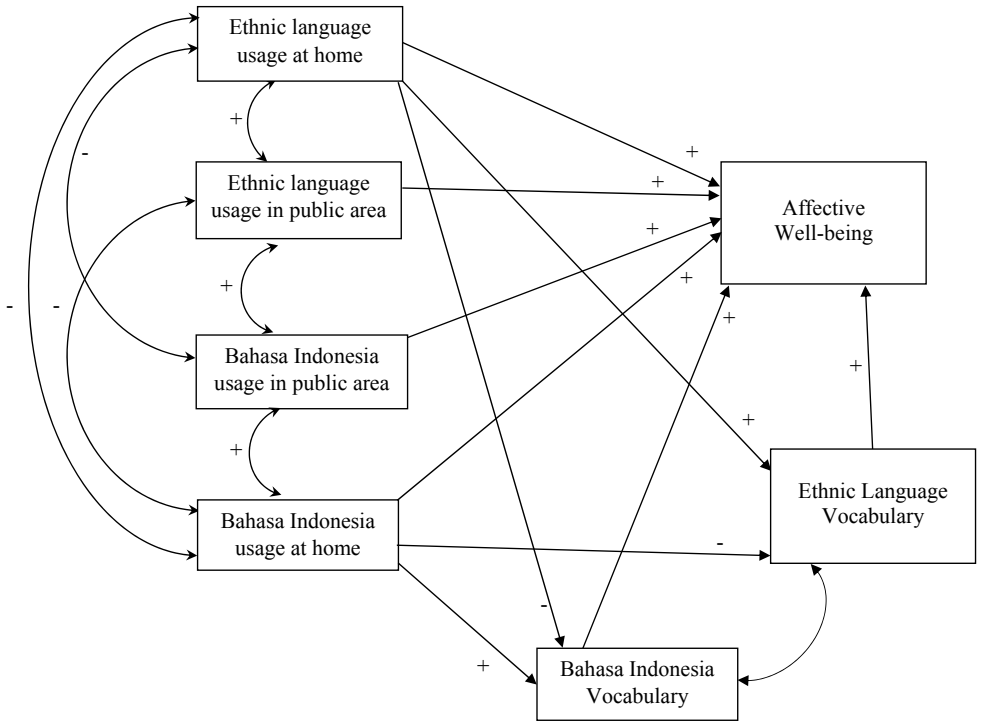


**Figure 1. Proposed Model of THE Correlations between Languages and Well-being.**

## Procedure

A local researcher contacted the public high school in Rantepao (Toraja) with the help of alumni contacts of the *Sekolah Tinggi Theologi* (Institute of Theology) Jaffray in Makassar, South Sulawesi, and the schools in Malang, Solo, and Jogjakarta with the help of alumni contacts of SAAT in Malang (South East Asia Bible Seminary, East Java) who were teachers in schools. The researcher and research assistants came to the schools to acquire consent from the schools, teachers, parents, and respondents. Instruments were administered in the class during regular school hours. All questionnaires were translated from English into Bahasa Indonesia following a translation/back-translation procedure (Van de Vijver & Leung, 1997) with the help of language teachers (English teacher and Bahasa Indonesia teacher) in Indonesia. All questionnaires were administered in Bahasa Indonesia, except for the ethnic language version of the Picture Naming Test. Research assistants were recruited from the Faculty of Psychology, Sanata Dharma University (Jogjakarta, Central Java) and Gadjah Mada University (Jogjakarta, Central Java), and from Christian Counseling Master Program, Institute of Theology Jaffray (Makassar, South Sulawesi), and South East Asia Bible Seminary (Malang, East Java). Research assistants received training from the first author and scored the Picture Naming Test. The list of correct answers of the Picture Naming Test of each language was provided by the help of language teachers (two teachers per language who prepared the list).

**Table 1.** Sample Characteristics

| | Javanese | Toraja | Chinese | Total |
|---|---|---|---|---|
| N | 132 | 109 | 100 | 341 |
| Male (%) | 46.21 | 26.61 | 45.06 | 42.52 |
| Father's education (%) | | | | |
| 1 = elementary/below | 19.70 | 6.42 | 1.00 | 9.38 |
| 2 = junior high | 9.09 | 12.84 | 7.00 | 9.68 |
| 3 = high school | 37.12 | 44.04 | 26.00 | 36.07 |
| 4 = college | 3.03 | 5.50 | 7.00 | 4.99 |
| 5 = university | 26.52 | 25.69 | 44.00 | 31.38 |
| 6 = master/above | 4.55 | 5.50 | 15.00 | 7.92 |
| Mother's education (%) | | | | |
| 1 = elementary/below | 21.22 | 8.26 | .00 | 10.85 |
| 2 = junior high | 10.61 | 15.60 | 6.00 | 10.85 |
| 3 = high school | 29.55 | 45.87 | 16.00 | 30.79 |
| 4 = college | 13.64 | 8.26 | 15.00 | 12.13 |
| 5 = university | 21.21 | 21.10 | 47.00 | 28.74 |
| 6 = master/above | 3.79 | .92 | 16.00 | 6.45 |
| Parents' dominant language (%) | | | | |
| Both are ethnic language | 82.82 | 89.91 | 30.00 | 69.21 |
| One is ethnic language | 4.55 | 7.34 | 25.00 | 11.44 |
| Both are Bahasa Indonesia | 13.64 | 2.75 | 45.00 | 19.35 |
| Paternal Education (Mean/*SD*) | 3.20 (1.56) | 3.48 (1.32) | 4.31 (1.26) | 3.61 (1.47) |
| Maternal Education (Mean/*SD*) | 3.13 (1.54) | 3.21 (1.21) | 4.51 (1.12) | 3.56 (1.46) |
| *M* Age (*SD*) | 15.00 (1.66) | 13.65 (.77) | 13.13 (.96) | 14.02 (1.47) |

## Measures

### *Demographics*

Information was collected about each participant's age, gender, ethnicity, parental level of education, parents' dominant language, age of acquiring Bahasa Indonesia, and age of acquiring the ethnic language. The parental level of education is coded into six scores; 1 for elementary/below, 2 for junior high school, 3 for high school, 4 for college, 5 for university, 6 for for master degree or above (see Table 1). Parents' dominant language is coded into 3 scores: 1 for both parents' dominant language are their ethnic language, 2 for one of the parent's dominant language is ethnic language and the other parent's dominant language is Bahasa Indonesia, and 3 for both parents' dominant language are Bahasa Indonesia (see Table 1).

### *Bahasa Indonesia and Ethnic Language Usage at Home Questionnaire*

Regarding the language spoken at home, information about the four directions of language interaction between parents and child were collected: mother's language spoken to child, father's language spoken to child, child's language spoken to mother, and child's language spoken to father (Han, 2009; Han & Huang, 2010). Sample items are "Mother speaks Bahasa Indonesia to you" and

"You speak Bahasa Indonesia to your father". There were one national (Bahasa Indonesia) and three ethnic languages spoken by the three ethnic groups in this study: Javanese, Toraja, and Chinese. Each item refers to four interaction pairs consisted of four possible language-use frequencies: never, sometimes, often, or very often speaks Bahasa Indonesia ($\alpha_{Javanese}$ = .95, $\alpha_{Toraja}$ = .92, $\alpha_{Chinese}$ = .88) and the ethnic language ($\alpha_{Javanese}$ = .93, $\alpha_{Toraja}$ = .92, $\alpha_{Chinese}$ = .90).

### *Bahasa Indonesia and Ethnic language in public area usage*

This scale is part of the Language Experience and Proficiency Questionnaire (LEAP-Q) by Marian, Blumenfeld, and Kaushanskaya (2007). The scale assesses how Bahasa Indonesia ($\alpha_{Javanese}$ = .83, $\alpha_{Toraja}$ = .88, $\alpha_{Chinese}$ = .84) and the ethnic language ($\alpha_{Javanese}$ = .91, $\alpha_{Toraja}$ = .92, $\alpha_{Chinese}$ = .94) are used in daily life such as with friends, television, radio, for reading and for studying. It consists of 10 items on a 1 to 10 scale, 1 is "almost never" or "almost none" and 10 is "always" or "a lot". Sample items are "On a scale from 1 to 10, indicate how much you use Bahasa Indonesia for (relating to friends/ watching TV/ listening to radio/ reading/ studying)", and "On a scale from 1 to 10, indicate how much you use your ethnic language (Javanese/Toraja/Mandarin) for (relating to friends/ watching TV/ listening to radio/ reading/ studying)".

### *Picture Naming Test (PNT)*

The test of vocabulary (Karkhurin, 2012) consists of 120 pictures prompting respondents to name each object on the picture (such as "chair", "pencil", and "mouse"). A correct answer is scored as 1 and a wrong answer is scored 0, with scores ranging from 0 to 120. A higher score is interpreted as a better knowledge of the language's vocabulary. The test is administered both for the national language referred as Bahasa Indonesia ($\alpha_{Javanese}$ = .93, $\alpha_{Toraja}$ = .84, $\alpha_{Chinese}$ = .92) and the three ethnic languages ($\alpha_{Javanese}$ = .92, $\alpha_{Toraja}$ = .97, $\alpha_{Chinese}$ = 1.00).

### *Affective Well-being*

Affective well-being is measured with the Positive and Negative Affective Schedule, which consists of 20 items such as "interested", "nervous", and "strong" (PANAS; Watson, Clark, & Tellegen, 1988). Response options ranged from 1 (*very slightly or not at all*) to 5 (*extremely*), and the score of negative items was reversed so that the overall score was positive ($\alpha_{Javanese}$ = .79, $\alpha_{Toraja}$ = .94, $\alpha_{Chinese}$ = .58, $\alpha_{Total}$ = .87). Respondents were asked to indicate their feelings at the moment they filled in the questionnaire.

## RESULTS

The missing scores (10.60% on mother's education level, 10.29% on father's education level, 5.88% on age, 1.76% on well-being score, 1.18% on sex, and 0.29% on language usage at home) were replaced by using imputed values (of regression based person score estimates based on the other variables of the model) after confirming that missing scores were missing completely at random (MCAR test $\chi^2(198) = 206.58$, $p = .32$).

## Group Differences

Univariate tests of group means yielded differences on affective well-being, Bahasa Indonesia usage at home, ethnic language at home, ethnic language usage in public, ethnic language vocabulary, and Bahasa Indonesia vocabulary, but not on Bahasa Indonesia usage in public (see Table 2). *Post hoc* tests showed that Chinese became proficient in their ethnic language later and scored lower on their ethnic language vocabulary than Javanese and Toraja. Chinese also scored lower on ethnic language usage at home and ethnic language usage in public than Javanese and Toraja, and there was no difference on Bahasa Indonesia usage in public. Additionally, Toraja scored higher than Chinese and Javanese, and Chinese higher than Javanese, on affective well-being and Bahasa Indonesia vocabulary (see Table 3). There was no difference between Javanese and Toraja on ethnic language usage in public, ethnic language vocabulary, and ethnic language usage at home (see Table 3). Overall, most results showed similar means between Javanese and Toraja, but Chinese had different means from Javanese and Toraja.

**Table 2.** Univariate Test Results

| | F (2, 334) | p | $h^2$ |
|---|---|---|---|
| Affective well-being | 71.87 | < .001 | .30 |
| Bahasa Indonesia usage at home | 10.53 | < .001 | .06 |
| Ethnic language usage at home | 15.99 | < .001 | .09 |
| Ethnic language usage in public | 21.15 | < .001 | .11 |
| Bahasa Indonesia usage in public | .06 | .94 | .00 |
| Ethnic language vocabulary | 122.89 | < .001 | .42 |
| Bahasa Indonesia vocabulary | 17.22 | < .001 | .09 |

*Note*. Ethnic languages are Javanese language (Javanese), Toraja language (Toraja), and Mandarin (Chinese).

**Table 3.** Scale Means per Ethnic Group and *Post Hoc* Tests of Their Differences

| | Javanese | Toraja | Chinese | Total |
|---|---|---|---|---|
| Scale | *N* = 132 | *N* = 109 | *N* = 100 | *N* = 341 |
| | *M* (*SD*) | *M* (*SD*) | *M* (*SD*) | *M* (*SD*) |
| Age of becoming proficient in Bahasa Indonesia | $5.67_a$ (1.96) | $5.15_b$ (1.39) | $3.99_c$ (.98) | 5.01 (1.69) |
| Age of becoming proficient in ethnic language | $6.97_a$ (2.19) | $6.83_a$ (2.53) | $8.29_b$ (2.88) | 7.31 (2.89) |
| Ethnic language usage at home | $10.95_a$ (3.75) | $11.44_a$ (3.12) | $7.53_b$ (3.19) | 9.97 (3.73) |
| Bahasa Indonesia usage at home | $10.00_a$ (3.99) | $11.03_b$ (3.11) | $13.67_c$ (2.68) | 11.54 (3.68) |
| Ethnic language usage in public area | $63.91_a$ (19.85) | $59.89_a$ (19.49) | $40.00_b$ (26.87) | 55.62 (24.23) |
| Bahasa Indonesia usage in public area | 76.57 (13.58) | 77.10 (14.62) | 76.27 (13.08) | 76.65 (13.75) |
| Bahasa Indonesia vocabulary | $92.07_a$ (15.62) | $101.51_b$ (7.91) | $95.78_c$ (17.21) | 96.18 (14.69) |
| Ethnic language vocabulary | $65.13_a$ (28.57) | $64.44_a$ (27.43) | $4.63_b$ (9.06) | 47.17 (36.48) |
| Well-being (PANAS) | $56.30_a$ (11.00) | $73.25_b$ (7.53) | $70.42_c$ (7.17) | 65.86 (11.78) |

*Note:* Means with different subscripts were significantly different in a Least Significant Difference *post hoc* test ($p < .05$).
Ethnic languages are Javanese language (Javanese), Toraja language (Toraja), and Mandarin (Chinese).

## Multigroup Path Analysis

### *Pre-Analysis*

First, we checked whether demographic variables were related to observed variables that we wanted to test. Because family SES is positively associated with affective well-being and language proficiency (e.g., Diener et al., 2010; Swami et al., 2010), we checked the association of parental education level with language, affective well-being, as well as age and gender which may also correlate to affective well-being. We ran regression analyses using sex, age, father's and mother's education level as independent variables for all psychological scales separately, which yielded significant results for almost all dependent variables: Bahasa Indonesia usage at home, ethnic language usage at home, Bahasa Indonesia usage in public, ethnic language daily usage in public area, Bahasa Indonesia vocabulary, ethnic language vocabulary, and affective well-being (see Table 4). Hence, we used the standardized residual scores of psychological variables in the analyses controlling for sex, age, father's and mother's education level.

### *Path analysis results*

In order to test whether similar relations would hold across Javanese, Toraja, and Chinese, a structural equation modeling multigroup path analysis was computed fitting the theoretical model, depicted in Figure 1. Structural equation modeling is a multivariate statistical analysis technique that is used to analyze relationships of variables. This technique is the combination of factor analysis and regression analysis, and it is used to analyze relationships between measured variables and can also involve latent constructs. In the present study we used path analysis among observed variables as a procedure that examines relationships between antecedent, mediating, and outcome variables in line with a postulated model (Byrne, 2001, 2004). We used the residual scores (controlling for age, sex, father's and mother's education level) of ethnic language usage at home, Bahasa Indonesia usage at home, ethnic language usage in public area, Bahasa Indonesia usage in public area, vocabulary knowledge on Bahasa Indonesia and ethnic language, and affective well-being. The results of the invariance tests are presented in Table 5. The most restrictive (modified)

**Table 4.** Regression Analyses Results

| | **F (4, 336)** | **p** | $R^2$ |
|---|---|---|---|
| Affective well-being | 23.89 | < .001 | .22 |
| Bahasa Indonesia usage at home | 23.89 | < .001 | .27 |
| Ethnic language usage at home | 15.55 | < .001 | .16 |
| Ethnic language usage in public | 11.92 | < .001 | .12 |
| Bahasa Indonesia usage in public | 1.76 | .14 | .02 |
| Ethnic language vocabulary | 52.84 | < .001 | .39 |
| Bahasa Indonesia vocabulary | 4.86 | < .001 | .06 |

*sex, age, father's and mother's education level as independent variables for each variable.
*Note:* Ethnic languages are Javanese language (Javanese), Toraja language (Toraja), and Mandarin (Chinese).

model with a good fit was the structural weights model, suggesting that all regression coefficients were identical across groups.

The mediation between Bahasa Indonesia usage at home and affective well-being was significant (standardized indirect effect = .02, 95% confidence interval (CI) [.00, .04]; we report bootstrap mediation confidence 95% intervals), as well as between ethnic language usage at home (standardized indirect effect = -.02, 95% CI [-.05, .00]), and between ethnic language usage in public area with affective well-being (standardized indirect effect = -.02, 95% CI [-.04, .00]). These results show that these indirect effects are very small, yet significant. It is also important to note that the $R^2$ values of affective well-being failed to reach significance.

We also found salient correlations between each language usage variable (see Figure 2): negative correlations between ethnic language and Bahasa Indonesia usage at home in all groups, and between ethnic language usage in public area and Bahasa Indonesia usage at home among Javanese and Chinese, positive correlations between Bahasa Indonesia usage in public area and ethnic language usage in public area among Javanese and Toraja, Bahasa Indonesia usage at home and Bahasa Indonesia usage in public area among Chinese, ethnic language usage at home and ethnic language usage in public area among Javanese and Chinese; however, there was no significant correlation between ethnic language usage at home and Bahasa Indonesia usage in public (see Figure 2).

## DISCUSSION

Regardless of ethnic group differences in mean vocabulary levels, we found that the mediation model generalized across groups. That means that for the first time we see evidence that language usage matters more than language knowledge for well-being among bilingual adolescents in Indonesia – irrespective of ethnic group membership. This adds to previous research which found that both language usage and knowledge matter for socioemotional outcomes (Han, 2009; Han & Huang, 2010). The relation between language usage and well-being is found across groups and the significant relations are found between affective well-being and both Bahasa Indonesia usage in the public area and Bahasa Indonesia usage at home. In the Indonesian context, where the dominant language is the second language for all groups, and the dominant language does not belong to any group like Bahasa Indonesia, the second language usage plays an important role in affective well-being not only for the less dominant minority groups, but also for dominant groups such as Javanese in Indonesia.

**Table 5.** Fit Indices of Path Model

| | $\chi^2$ (*df*) , *p* | TLI | CFI | AGFI | RMSEA[a] |
|---|---|---|---|---|---|
| Unconstrained | 12.81 (12), .38 | .98 | 1.00 | .93 | .01 (.00, .06) |
| Structural weights | 44.71 (33), .08 | .92 | .96 | .91 | .03 (.00, .06) |
| Structural covariances | 117.79 (51), .00 | .69 | .75 | .84 | .06 (.05, .08) |

[a]Numbers between parentheses refer to the 90% confidence interval

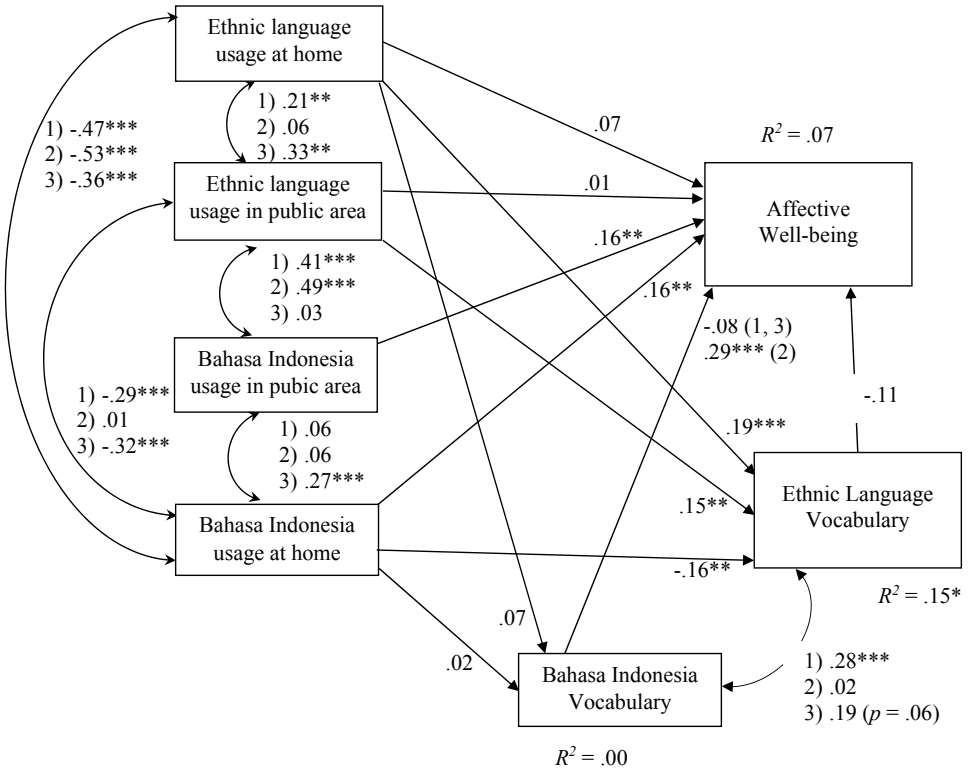


**Figure 2. Structural Residuals (Modified) Model of THE Correlations between Languages and Well-being.** *$P$ < .05. **$p$ < .01. ***$p$ < .001. 1) Javanese, 2) Toraja, 3) Chinese

In the context such as Indonesia, when a language is dominant in the society, the language would become more important for affective well-being, which in our case would be Bahasa Indonesia in the whole area of Indonesia. It should be noted that Bahasa Indonesia is the second language and not the heritage language of the three ethnic groups in this study. We showed that there is a positive relation between proficiency in the lingua franca (Bahasa Indonesia) and affective well-being for both dominant and non-dominant ethnic groups. This finding was unique compared to findings from previous studies which were done in multicultural Western context with one ethnic (majority group) language as the dominant language (e.g., Han, 2009; Han & Huang, 2010). In the Indonesian context, bilingualism is a necessity for all ethnic groups including the dominant group, whereas in the Western context, usually the dominant group is monolingual. We found evidence that different aspects of bilingualism may relate to well-being differently because of the differences in the context (see also Sari et al., 2018a). In the immigration context, second language competence is important for establishing relationships with the dominant group and ethnic language competence is a marker of group belonging. Therefore, in an immigration context, language competence is important for well-being. However, in the Indonesian context, language competence is not a marker of group belonging because everyone (from all dominant

and non-dominant groups) is fluent in the lingua franca and has similar access to both national and ethnic languages (see also Sari et al., 2018a). The absence of the role of the language as a group marker in the relationship between groups in Indonesia, makes the language competence matters less than language usage, and lingua franca matters more than ethnic language for well-being among Indonesian adolescents.

The results of univariate tests showed that all groups seemed to use Bahasa Indonesia in public similarly, while similarities in using ethnic language were only found among Javanese and Toraja. The Chinese as the minority immigrant descendant group scored lower than the other two groups on ethnic language usage at home as well as in public, and ethnic language vocabulary. As shown in Table 2, only 30% of Chinese adolescents reported that both parents spoke their ethnic language (much lower than the other groups). It therefore appears that for the Chinese group, their ethnic language is gradually replaced by Bahasa Indonesia.



The Toraja language is the dominant language in Toraja homeland in South Sulawesi and is a prerequisite for many aspects of their cultural maintenance, including cultural ceremonies such as *Rambu solo* (Panggara, 2015). Given high levels of cultural maintenance, the ethnic language vocabulary and ethnic language usage among Toraja adolescents is high and comparable to the Javanese (see Table 1). Hence, when the minority group is dominant in their specific geographical area (ethnic group's homeland), and the first language and both the second language usage and vocabulary are important, becoming bilingual can be highly adaptive. Bilingualism among Toraja is an example of this adaptive bilingualism; Toraja scored the highest on Bahasa Indonesia vocabulary and the correlation between Bahasa Indonesia vocabulary and affective well-being was only found among Toraja. It means that for the Toraja, Bahasa Indonesia is very important to engage with other groups and plays an important role in their well-being.

Toraja are similar to Javanese in their competency as bilinguals, while Chinese in Java seem to gradually move away from their ethnic language (some may not even have acquired it in the first place) in favour of the second language; Bahasa Indonesia (see Sari et al., 2018a, b). It is important to note that the ethnic language vocabulary of Chinese is very limited. Chinese in Java as a minority who are considered as immigrant descendants in Indonesia have become different from the other two groups: more monolingual than bilingual. Overall, our data show that Bahasa Indonesia (as the lingua franca) is the dominant language for all groups, whereas the ethnic language is used mainly in the private life (see Table 2).

Ethnic language vocabulary does not relate to affective well-being, but the usage of Bahasa Indonesia both at home and in public do. These findings give us more insight into the role of both Bahasa Indonesia as the lingua franca and ethnic language on adolescents' affective well-being. We found a direct relation between lingua franca and affective well-being which has not been found before. Since most studies were done among immigrants in Western, educated, industrialized, rich, democratic (WEIRD) societies (Henrich, et al., 2010), the lingua franca is usually the first language of the dominant group and the second language of the minority groups, the studies usually focus on well-being of the minority groups. Here, Bahasa Indonesia is a lingua franca and the second language as well for all groups including the largest or dominant group. In such a context, even for

the largest group (Javanese), both the second language (Bahasa Indonesia) and ethnic language usage relate to well-being in the same manner as for the non-dominant groups.

## LIMITATIONS

While the results of the study demonstrate that language usage is related to affective well-being among adolescents across groups in Indonesia, it is important to note that these data are correlational and cross-sectional and that the model does not assess or imply causality. Another limitation is that the Cronbach's alpha value of the PANAS among Chinese participants was rather low. We suggest more exploration of the difference on perception of positive and negative feelings which are aspects of affective well-being between ethnic groups, which we had not done. Differences in the educational systems between Java and Sulawesi may also need attention: In Java, Javanese language is taught at schools and is studied in universities, but Toraja language is not taught in schools and universities in the province of Toraja Utara (North Toraja) where this study was conducted. Finally, while the PNT seems to provide some insight into (self-reported) language use, it remains unclear whether it taps into the level of actual language use. We also did not measure intelligence, which may influence the results of language the test. It is necessary for future studies to provide information about how the PNT relates to more objective language tests, intelligence, and more diverse assessments of daily language use (e.g., via experience sampling methods, or ratings of others) that would allow for a triangulation of the data obtained.

## CONCLUSION

Our study goes beyond what is known from previous work about the relationship between bilingualism and well-being (e.g., Birman, 1998; Han, 2009) by adding novel information from a non-immigration, non-Western, multicultural context, in which various groups reside that differ in their relative standing in society. We found that a) self-reported language usage is more important than language vocabulary knowledge for the affective well-being of adolescents, and that b) bilingual adolescents who use the lingua franca are better integrated in their environment (Sari et al., 2018c) and happier in the Indonesian context where all ethnic groups are characterized by an integration of ethnic and national culture – which is different from most Western immigration contexts where groups can differ in terms of their degree of integration of two cultures. We show that bilingualism patterns differ by specific context of the group, but regardless of differences in language performance or usage, bilingualism in general matters for well-being across contexts. However, both aspects, language usage and competence, relate differently to well-being depending on the context of bilingualism; such as whether language knowledge magnitude the relation between language usage and well-being or not, and which language matters more for affective well-being.

To conclude, we provide the first evidence for the relationship between language practices and affective well-being in a multilingual, non-immigration, non-Western context, and we suggest that the specifics of each group need to be considered to understand the role that language plays for affective well-being. Due to such characteristics (e.g., the language policies the Chinese group in our study experienced), relationships between affective well-being and language usage may

not always be similar between immigration and non-immigration contexts. Our findings provide information that can be considered by policy makers for education and language usage policy in multicultural countries.

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# CHAPTER 5

## CONTEXTUALIZED BILINGUALISM AMONG ADOLESCENTS FROM FOUR DIFFERENT ETHNIC GROUPS IN INDONESIA

*Sari, B. T., van de Vijver, F. ,Chasiotis, A. & Bender, M. (2018). Contextualized bilingualism among adolescents from four different ethnic groups in Indonesia. International Journal of Bilingualism, 1-14. doi: 10.1177/1367006918803678*

## ABSTRACT

### Aims and objectives

We were interested in group differences in Indonesia in bilingualism, whether vocabulary knowledge shows a differential pattern across the languages, and whether language skill and usage differences between groups are moderated by contextual factors, such as ethnic group size.

### Data and analysis

We examined group differences in language usage at home and in public, self-reported proficiency, and vocabulary scores in both languages among 632 adolescents (292 males, $M_{age}$ = 14.57 years) from four ethnic groups in Indonesia (214 Javanese, 115 Batak Toba, 108 Toraja, and 195 Chinese). Differential item functioning (DIF) analysis was conducted to test whether adolescents had different vocabulary they only know in one language, which would indicate equality/inequality in access to knowledge in the two languages.

### Findings

There were large differences in language knowledge and usage. The lowest scores in ethnic language vocabulary and usage were found among the Chinese group. Across groups, scores on Bahasa Indonesia (L2) vocabulary were higher than ethnic language (L1) vocabulary. However, the ranking from easy to difficult words was similar across the languages and there were no specific sets of items that were differentially known in any language.

### Implication

Despite the differences in bilingualism skill and usage, all groups have similar access to different domains of the languages, and L2 (Bahasa Indonesia) seems to have become the dominant language in all groups. Our findings also imply that bilingualism comprises various domains, including language skill, self-reported proficiency, and self-reported usage, and that the associations between these components are not very strong.

### Originality

We investigated bilingualism among non-immigrants adolescents in an under-researched, non-WEIRD (western, educated, industrialized, rich, democratic) society. The study shows the role of language usage and skill that is different from a Western context in various aspects, such as the dominance of L2 in all groups.



### Keywords

bilingualism, item bias, picture naming test, adolescents, Indonesia.

Bourhis, Moïse, Perreault, and Senécal (1997) stated that there have been debates about what kind of state policies can enhance the integration of the immigrants within the host majority. They described a model, called Interactive Acculturation Model (IAM), which proposes that relational outcomes are the product of the acculturation orientations of both the host majority and immigrant groups that is influenced by state integration policies with three domains; (1) acculturation orientations adopted by immigrant groups in the host community; (2) acculturation orientations adopted by the host community towards specific groups of immigrants; (3) interpersonal and intergroup relational outcomes that are the product of combinations of immigrant and host community acculturation orientations. But what about a non-immigration multicultural context, where the state also makes policies about language/s usage such as Indonesia?



Indonesia provides a unique multicultural context for studying bilingualism because almost all ethnic groups, including the dominant Javanese group, need to acquire Bahasa Indonesia, which is the lingua franca (Suryadinata et al., 2003). Indonesia is different from many other contexts where the second language of the minority group is usually the language of the dominant group. Only around 12% of the research focus on youth and adolescence - and most of this research is conducted in Western, educated, industrialized, rich, democratic (WEIRD) societies (Celenk & van de Vijver, 2011; Henrich, Heine, & Norenzayan, 2010). Moreover, only few studies on bilingualism have been done in Indonesia (e.g., Barlett, 1952; Kurniasih, 2006; Marlina, 2016; Nababan, 1985), and those studies have limitations in their sample size and methodology. For instance, Marlina (2016) only used two adult cases from which the conclusion was drawn that the educational system could strengthen bilingualism. Another study on bilingualism in education was done by Kurniasih (2006) in Jogjakarta (Java). This study gave information about how bilingualism patterns differ across social classes of Javanese children. She studied the patterns of language use among 108 Javanese school age children (11 and 14 year old) at home and at school, and the language that the parents used to talk to the children and to their social networks. The middle-class parents and children used Bahasa Indonesia much more than their working class counterparts, and girls spoke Bahasa Indonesia more than boys (Kurniasih, 2006). From these studies we got some information about bilingualism in Indonesia, but there is still a lack of knowledge about bilingualism patterns among many other ethnic groups in Indonesia, how bilingualism patterns are similar or different across ethnic groups, and how bilingualism is influenced by the cultural context of each ethnic group, especially among adolescents. This knowledge is important for developing language policies for education and migration in a multicultural context.

Our previous studies showed that there were substantial group differences in ethnic language usage at home and in public, though Bahasa Indonesia usage in public did not differ between Javanese and Chinese (Sari, Chasiotis, van de Vijver, & Bender, 2018a, 2018b). We also found that ethnic language usage related positively to vocabulary knowledge of ethnic language, but Bahasa Indonesia usage did not relate to Bahasa Indonesia vocabulary knowledge among Javanese, Toraja, and Chinese adolescents in Indonesia (Sari et al., 2018b). From these studies, the question was raised whether the differences on the relationship between the language usage and skill of the two languages might be related to differential ages of acquisition of the two languages or whether vocabulary knowledge would show some ethnic specificity (which would be confirmed if at least

ethnic group would show relatively little or much knowledge in a specific domain of words). Such differential knowledge would reveal itself as item bias of the vocabulary knowledge measurement, the Picture Naming Test (Kharkhurin, 2012) in the present study. Procedures can be employed to test whether specific items, words in our case, are relatively easy or difficult compared to other items of the test; these procedures identify what has become known as items bias or differential item functioning (DIF) (Van de Vijver & Leung, 1997). If there would be ethnic groups that "specialize" in teaching specific types of words, children would find those items relatively easy in comparison with children from other ethnic groups, even if the global vocabulary level of the children from different ethnic groups would be similar. Further, we would be able to answer the question whether the differences between groups on language skill reflect differences in educational accessibility and power which is usually found in immigration contexts in the Western countries.

## INDONESIA AS A NON-IMMIGRATION MULTICULTURAL CONTEXT

Most studies on bilingualism have been conducted in countries with a majority host group and immigrant minority groups and the dominant language is the native tongue of the dominant group. In Indonesia, there is no majority group, because the biggest group, Javanese, is only around 40% of the population; there are more than 300 different languages spoken by hundreds of ethnic groups (Ananta, Arifin, Hasbullah, Handayani, & Pramono, 2015; Suryadinata et al., 2003). Furthermore, Bahasa Indonesia as national language is originally the mother tongue of the *Melayu* ethnic group, which make up only 2% of the population in Indonesia (Ananta et al., 2015; Suryadinata et al., 2003). All of the participants in this study are taught formal Bahasa Indonesia in school. Hence, they have a formal register of the language. In Indonesia, spoken Bahasa Indonesia as a formal language is different from local languages used primarily as colloquial languages (Cohn, & Ravindranath, 2014). In this study, we investigate how adolescents from Javanese, Toraja, Batak Toba, and Chinese ethnic group use their ethnic language besides Bahasa Indonesia as the national language, and the languages are labeled accordance with the classification by Simon and Charles (2018) as: Javanese, Toraja, Batak Toba, Mandarin, and Bahasa Indonesia.

*Javanese*. Most Javanese live in Java which is the most populated island; around 60% of the Indonesian population live in Java (Ananta et al., 2015; Suryadinata et al., 2003), where we sampled our Javanese participants (Central and East Java). Besides Javanese, there are other smaller ethnic groups in Java such as Sundanese (West Java), Betawi (Jakarta), Madura (East Java), Banten (West Java), and Cirebon (West Java). The Javanese language is spoken by 70% of the population in Java island, and their dominance in the social and politics arena enables Javanese to maintain their ethnic language from generation to generation (Suryadinata et al., 2003). Javanese were found to be most fluent in the ethnic language, whereas Toraja had the highest sum scores on L1 and L2 vocabularies (Sari et al., 2018b).

*Toraja*. Toraja have similarities with Javanese in maintaining their ethnic language and culture and mainly live in the area of Tana Toraja, South Sulawesi. They are a minority group (0.37% of the Indonesian population) (Ananta et al., 2015; Suryadinata et al., 2003). Toraja is a much smaller

group compared to Javanese; as a consequence, they may interact more with people with a different ethnic language. This is in line with our observation that they more often speak Bahasa Indonesia compared to Javanese (Sari et al., 2018b).

*Chinese*. Unlike other ethnic groups, there is no home province for the Chinese (Ananta et al., 2015). Chinese in Java speak their ethnic language much less than Bahasa Indonesia (Sari et al., 2018a, 2018b; Suryadinata, 2003). Their ethnic language is only used among a very small group and Chinese children have only been officially allowed to acquire the Mandarin language after the fall of Soeharto, who reigned from 1967 till 1998 (Suryadinata et al., 2003). The prohibition may have led to language loss among the Chinese population in Indonesia. The language loss may also relate to the social position of the Chinese group in Indonesia. There are two social classes of Chinese in Indonesia and these two groups have used their ethnic language differently. The first group is Chinese *Peranakan* or upper class Chinese; the majority of them live in Java (Oetomo, 1988). These upper class Chinese in Java had shifted their language of intimacy (in the private area) to the Malay language in the nineteenth century as a marker of their social class, which is higher than Chinese *Totok* (lower class Chinese). Chinese language with a variety of dialects were more commonly spoken among these *Totok* (Oetomo, 1988). Respondents in this study were born in or after 1998, so they would have had, in principle, the opportunity to acquire Mandarin language.

*Batak Toba*. Batak, who constitute 42% of the population in North Sumatra, speak Bahasa Indonesia during official occasions and in daily conversations when relating to other ethnic groups, while they speak Batak when interacting with their own ethnic group (Sari et al., 2018a; Suryadinata et al., 2003). North Sumatra is home to the Batak ethnic group (which makes up less than 10% of the Indonesian total population; Ananta et al., 2015; Suryadinata et al., 2003). Like Toraja, Batak also show similarities with Javanese in their strong ethnic culture orientation, but Batak speak Bahasa Indonesia more in public compared to Javanese. Javanese speak Javanese language in public more than other minority groups speak their ethnic language (Sari et al., 2018a, 2018b; Suryadinata et al., 2003). We are interested in the implications of these contextual differences for language usage and knowledge.

## BILINGUALISM AND DEVELOPMENT OF BILINGUAL SKILLS

Some researchers suggested that bilinguals are those who are native-like in the proficiency of both languages (Cutler, Mehler, Norris, & Segui, 1992). Children who are exposed to two languages from birth can become native-like speakers of both, while adults often struggle with second language learning and rarely attain native-like fluency (e.g., Flege, Yeni-Komshian, & Liu, 1999; Huang & Jun, 2011). Another relevant concept is simultaneous bilingualism which occurs when two languages are acquired from birth or prior to one year of age (De Houwer, 2005). Bilingualism can be seen as a condition in which L1 (first) oral language skills are related to L2 (second) oral language skills, and children with strong L1 skills show better acquisition of L2 (Cummins, 1991). However, language skills can be different in both languages. Lambert (1983) attributed the positive influence of bilingualism to additive contexts in which the second language is socially relevant and is learned by supplementing the first language, that is, without replacing the first language. The negative

consequences are due to subtractive bilingualism where the first language is replaced by the second language. But this explanation clearly does not apply to all bilinguals. Hence, although there are various explanations of bilingualism, bilingualism is not easy to define for all contexts.

Within the context of our study, bilingualism refers to the knowledge of an ethnic language (almost always acquired first) and Bahasa Indonesia (almost always acquired later), but the age of acquisition of the languages may vary between groups. Bilingualism in Indonesia may differ across ethnic groups, although we know that L2 is acquired after L1. Not much is known about the pattern of bilingualism and vocabulary development among Indonesian bilinguals of different ethnic descent. Among bilinguals, vocabulary development is typically delayed in learning a second language (August, Carlo, Dressler, & Snow, 2005). It is relatively more difficult for developing a depth of vocabulary knowledge of the second language (Feldman & Healy, 1998). This study especially addresses the measurement of L1 and L2 vocabulary among adolescents in Indonesia, in addition to self-reported language skill and usage to understand bilingualism pattern in Indonesia.

## MEASURING LANGUAGE SKILL IN TWO OR MORE LANGUAGES

For many studies it is necessary to consider language dominance in more detail and to obtain precise measurements of particular aspects of a bilingual's ability, such as a measure of their vocabulary or fluency to complement the information that can be obtained through a questionnaire (Daller et al., 2011). Bilingualism measures vary depending on the concept that is used for the construction of the linguistic measurement. The existing measures of bilingualism use rating scales and lexical richness tests in the education studies whereas measures on bilingualism in many psycholinguistic studies are mainly built on the linguistic dominance concept which deals with the question of how two languages are processed in the individual's mind (Pienemann & Ke-ler, 2007). Measuring vocabulary in two or more languages is a way to assess language dominance in more detail and to obtain precise measurements of particular aspects of a bilingual's ability, to complement the information that can be obtained through a questionnaire (Daller, Yildiz, De Jong, Kan, & Basbagi, 2011). Daller et al. (2011) argue that evaluating language dominance is highly relevant in a number of areas of research but it is difficult to achieve since many bilinguals, in particular those living in an immigrant setting, use two or more languages with large structural differences (e.g., Chinese/Indonesian and other pairs) in their everyday life. Daller et al. (2011) believe that a simple measure of language fluency can reveal language dominance in bilinguals. However, it is a challenge to measure bilingual ability in these language pairs, because it is difficult to ensure that measures are comparable across languages (e.g., language system, word order). That is why it is necessary to test whether specific items are relatively easy or difficult compared to other items of the test between languages, which we want to do in this study. Moreover, if proficiency in one language proficiency is higher than in the other, would it mean that the language with higher score is also used more both in private life and in public? This study also examines whether dominance in language usage implies higher proficiency.

It is necessary to have a reliable and valid tool that can be applied across cultures. A solution that can be considered to measure bilingualism is by combining a language performance test

with self-reported language proficiency and self-reported language usage. A combined measure comprising language performance, self-rated skill, and self-reported language usage will be used in this study. One of the instruments to measure language performance is the Picture Naming Test (e.g., Kharkhurin, 2012). The Picture Naming Tests is developed by Kharkhurin (2012) and uses 120 pictures to test vocabulary knowledge. This Picture Naming Test for English language correlates significantly with the Test of English as a Foreign Language (TOEFL) score, which shows the validity of Picture Naming Test for English language ability, especially productive vocabulary knowledge (Kharkhurin, 2012). By combining both cognitive (Picture Naming Test; Kharkhurin, 2012) and self-reported language use (e.g., LEAP by Marian, Blumenfeld, & Kaushanskaya, 2007) we examine how language dominance among bilingual adolescents can be similar or different depending on the context.



## PRESENT STUDY

To answer the question of the patterns of bilingualism in Indonesia, we investigated the differences of the pattern of bilingualism of four different ethnic groups, and conducted differential item functioning (DIF) to test whether adolescents would have different sets of types of words they only know in one language. Our earlier studies among adolescents in Indonesia showed that there were differences on the language vocabulary and age of being proficient in the language; Javanese became proficient in the ethnic language earlier and they used the ethnic language more than Chinese, Batak, and Toraja; Toraja showed the highest scores on both vocabulary tests, whereas Chinese scored the lowest in ethnic language vocabulary (Sari et al., 2018a, 2018b). We found that language usage and language vocabulary showed different patterns (e.g., participants with a high score on Bahasa Indonesia vocabulary reported high usage of Bahasa Indonesia, but they scored much lower on the ethnic language vocabulary than on Bahasa Indonesia, although they reported high ethnic language usage). We were interested in differences in word difficulties across languages: Is there a certain discourse associated with each language (for example, words could be domain specific, such as school terms in Bahasa Indonesia, and words for everyday objects in the ethnic language)? This specificity of words across languages would mean that the difficulty of words would be different across languages (e.g., the name of a tool would be easier in the ethnic language than in Bahasa Indonesia). This domain specificity is studied here using procedures for differential item functioning (DIF).

DIF procedures are used to examine whether there are specific words/items which are easier or more difficult in a specific language (Jodoin & Gierl, 2001). DIF procedures test whether the relative order of difficulty of an item is invariant across languages. The focus of our analyses is on relative difficulty and not on identity of difficulty level of a word across languages; so, a bilingual can be more proficient in one language than in another, which has implications for how many words he or she will know in both languages. When we study domain specificity, we want to know whether words have the same difficulty rank order across the languages. So, even if a Mandarin- and Bahasa Indonesia-speaking adolescent would be more proficient in Bahasa than in Mandarin, we would expect (under the assumption of no domain specificity) that the rank order from easy to

difficult words would be the same in the two languages, which implies that all groups are similarly knowledgeable in the languages across different domains.

## HYPOTHESES ON GROUP DIFFERENCES ON BILINGUALISM

The following differences are expected:

1. Regarding Bahasa Indonesia usage at home: Chinese as the smallest group, previously exposed to a ban on using their language, are expected to speak Bahasa Indonesia at home more than the other groups, and Javanese as the dominant and largest group are expected to speak Bahasa Indonesia at home the least. Batak and Toraja who are also smaller and less dominant groups are also expected to use Bahasa Indonesia more than Javanese at home, but less than the Chinese.

2. Regarding ethnic language usage at home: Chinese are expected to speak their ethnic language the least at home, and Javanese to speak their ethnic language the most. Toraja who strongly focus on their own culture are expected to speak their ethnic language more than Chinese and Batak, and Batak more than Chinese.

3. Regarding Bahasa Indonesia usage in public: It is expected that there will be no differences among the smaller groups (Toraja, Batak, and Chinese), but Javanese will score lower as the Javanese language is also often used in public in Java besides Bahasa Indonesia.

4. Regarding ethnic language usage in public: Chinese are expected to speak their ethnic language in public the least, and Javanese to speak their ethnic language in public the most. Toraja who strongly identify with their own culture are expected to speak their ethnic language more than Chinese and Batak, and Batak more than the Chinese.

5. Regarding self-rated ethnic language proficiency: Javanese will score higher on self-rated ethnic language proficiency compared to Chinese, Toraja and Batak will also score higher than Chinese, and Chinese will score the lowest.

6. Regarding ethnic language vocabulary knowledge: Chinese will score the lowest on ethnic language vocabulary (Picture Naming Test score), and Javanese will score the highest, followed by Toraja and Batak.

### Differential Item Functioning (DIF)

The DIF part of the study is exploratory; we do not specify any hypothesis.

# METHOD

## Participants

Participants were 632 school-going adolescents (292 males). They were Javanese from Java (214), Batak from North Sumatra (115), Toraja from Tana Toraja in South Sulawesi (108), and Chinese minority group mainly from Java (195). Their ages were between 12 to 19 years with $M_{age}$ = 14.57 years (see Table 1), and the median parental education level was college (between 13-15 years of education).

## Procedure

Participants were recruited from schools in five provinces in Sumatra, Sulawesi, and Java islands: North Sumatra, South Sulawesi, DKI (Special Province of Capital) Jakarta, Central Java, and East Java. Participants were contacted from high school with the help of some local universities and institutes. The consent forms were collected from the headmaster of the school, teachers, parents, and respondents. Nine native speakers of the respective language served as research assistants and scored the answers of the Picture Naming Test. Nine research assistants who were native speakers of the respective language scored the answers of the Picture Naming test following the guidance of word lists provided by the researcher with the help of local language teachers (Kharkurin, 2012). Instruments were administered in Bahasa Indonesia in the class during regular school hours. All questionnaires were translated from English into Bahasa Indonesia following a translation/back-translation procedure (Van de Vijver & Leung, 1997) with the help of language teachers in Indonesia.

## Measurements

### *Demographic characteristics*

Demographic characteristics about participant's age, gender, parental education level, and ethnicity were asked.

### *Bahasa and Ethnic Language Usage at Home Questionnaire*

Regarding the language spoken at home, information about the four directions of language interaction between parents and child were collected: mother's language spoken to child, father's language spoken to child, child's language spoken to mother, and child's language spoken to father (Han & Huang, 2010). Sample items are "Mother speaks Bahasa Indonesia to you" and "You speak

**Table 1.** Sample Characteristics

| Ethnic Group | *N* | Male | $M_{age}$ *(SD)* | $M_{Father's\ education}$ *(SD)* | $M_{Mother's\ education}$ *(SD)* |
|---|---|---|---|---|---|
| Javanese | 214 | 55.14% | 15.26 (1.43) | 3.03 (1.59) | 2.81 (1.49) |
| Batak Toba | 115 | 40.00% | 15.65 (1.13) | 3.77 (1.75) | 3.74 (1.83) |
| Toraja | 108 | 25.93% | 13.65 (.77) | 3.54 (1.35) | 3.30 (1.29) |
| Chinese | 195 | 51.28% | 13.68 (1.32) | 4.43 (1.55) | 4.56 (1.45) |
| Total sample | 632 | 46.20% | 14.57 (1.53) | 3.68 (1.67) | 3.60 (1.67) |

Bahasa Indonesia to your father". There were one national (Bahasa Indonesia) and three ethnic languages spoken by the three ethnic groups in this study: Javanese, Toraja, Batak Toba, and Mandarin. Each language interaction pairs consisted of four possible language-use frequencies: never, sometimes, often, or very often speaks Bahasa Indonesia ($\alpha_{Javanese}$ = .94, $\alpha_{Batak\ Toba}$ = .94, $\alpha_{Toraja}$ = .91, $\alpha_{Mandarin}$ = .88) and the ethnic language ($\alpha_{Javanese}$ = .92, $\alpha_{Batak\ Toba}$ = .97, $\alpha_{Toraja}$ = .91, $\alpha_{Mandarin}$ = .89).

### *Self-rated Bahasa Indonesia and ethnic language proficiency*

This scale is part of the Language Experience and Proficiency Questionnaire (LEAP-Q) by Marian, Blumenfeld and Kaushanskaya (2007). The scale assesses how well the respondent can comprehend, speak, and read Bahasa Indonesia on a scale from 1 to 10 ($\alpha_{Javanese}$ = .81, $\alpha_{Batak\ Toba}$ = .87, $\alpha_{Toraja}$ = .80, $\alpha_{Mandarin}$ = .84) and the ethnic language ($\alpha_{Javanese}$ = .84, $\alpha_{Batak\ Toba}$ = .87, $\alpha_{Toraja}$ = .93, $\alpha_{Mandarin}$ = .89). The lowest score is 3 and the highest score is 30 for each language.

### *Bahasa and Ethnic language usage in public area*

This scale is part of the Language Experience and Proficiency Questionnaire (LEAP-Q) by Marian, Blumenfeld, and Kaushanskaya (2007). The scale assesses how much the participant uses Bahasa Indonesia ($\alpha_{Javanese}$ = .80, $\alpha_{Batak\ Toba}$ = .96, $\alpha_{Toraja}$ = .90, $\alpha_{Mandarin}$ = .85) and ethnic language ($\alpha_{Javanese}$ = .90, $\alpha_{Batak\ Toba}$ = .94, $\alpha_{Toraja}$ = .95, $\alpha_{Mandarin}$ = .95) on a scale from 1 to 10 when watching television, listening to the radio, learning or studying, speaking with friends, and reading. There are 10 items for each language. Sample items are "On scale 1-10 how much you use Bahasa Indonesia for listening to the radio?" or "On scale 1-10 how much you use ethnic language for reading?". The lowest score is 10 and the highest score is 100 for each language.

### *Picture Naming Test (PNT)*

The test on vocabulary knowledge (Kharkurin, 2012) consists of 120 pictures and respondents should give the name of each object in the picture such as chair, pencil, and mouse. A correct answer is scored 1 and an incorrect answer is scored 0; the total score can range from 0 to 120 (a higher score denotes higher vocabulary knowledge). The test is given for Bahasa Indonesia ($\alpha_{Javanese}$ = .93, $\alpha_{Batak\ Toba}$ = .92, $\alpha_{Toraja}$ = .84, $\alpha_{Mandarin}$ = .92) and ethnic language ($\alpha_{Javanese}$ = .92, $\alpha_{Batak\ Toba}$ = .97, $\alpha_{Toraja}$ = .97, $\alpha_{Mandarin}$ = 1.00).

## Differential Item Functioning Procedure

For exploring whether there is item bias or not in the Picture Naming Test, DIF procedures were used (Jodoin & Gierl, 2001). We used dummy scoring for culture, with the Javanese group as the reference group. We computed deviance scores of each language, and the interaction of each deviance score on each language with each culture. We ran logistic DIF analyses for each item with 6 different blocks with dependent variables; block 1: total score of PNT of the respected language of the item; block 2: total score of PNT of Bahasa Indonesia and total score of PNT of ethnic language; block 3: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, and culture dummies; block 4: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language,

culture dummies, and interaction of deviance score of Bahasa Indonesia with culture; block 5: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, culture dummies, and interaction of deviance score of ethnic language with culture; block 6: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, culture dummies, and interaction of deviance score of both languages with culture. The details about the DIF procedures are available in an online appendix.

## RESULTS

### Group Differences on Bilingualism Pattern



Univariate tests revealed that all scales showed significant group differences (see Table 2). Bahasa Indonesia vocabulary knowledge was highest among ethnic group of Toraja, followed by Javanese and Chinese, and was lowest among Batak Toba ethnic group. The group differences in ethnic language vocabulary were very large (the effect size was $h^2 = .49$, which is about four times the effect size of the differences on the Bahasa Indonesia vocabulary). Remarkably, the *post hoc* test revealed that all group differences on ethnic language vocabulary were significant. The lowest scores were obtained by the Chinese group, followed by Batak Toba, Toraja, and Javanese group. As can be seen in Table 2, mean scores on ethnic languages were much lower than the scores on Bahasa Indonesia, which points to the language dominance of Bahasa Indonesia in all groups. This is an important finding, as Bahasa Indonesia is the second language for most, if not all, participants, showing a language shift going on in Indonesia (see Abtahian et al., 2016). As for language usage at home, Chinese spoke Bahasa Indonesia at home more than the other groups, and Javanese spoke Bahasa Indonesia at home the least. Ethnic language usage at home follows the opposite pattern, with Chinese speaking their ethnic language least and Javanese speaking their ethnic language most at home. Combining the two languages, a consistent pattern emerges: Toraja and Batak Toba speak both languages regularly at home, whereas in Chinese families more Bahasa is spoken and in Javanese families more Javanese is spoken. Group differences in Bahasa usage in the public domain are small ($h^2 = .02$); Toraja scored highest on this scale. The pattern of ethnic usage in public replicated the pattern of ethnic usage at home (with Javanese and Chinese as highest and lowest scoring groups). Finally, Javanese scored lower on Bahasa self-rated proficiency than the other three groups, which did not differ from each other. The self-rated proficiency in the ethnic language was smaller for Chinese than for the other groups; the latter three groups did not differ from each other. In summary, the hypotheses 1 to 6 are fully supported. We found in all groups that Bahasa Indonesia knowledge is larger than ethnic language knowledge; the pattern in self-rated proficiency was similar. Language usage follows a consistent pattern in that Javanese use more the ethnic language and Chinese more Bahasa Indonesia whereas Toraja and Batak Toba have this focus much less and seem to speak both languages equally often.

### Item Bias on Language Vocabulary Knowledge with DIF analyses

The results of the logistic DIF analyses can be accessed online as appendix. The analysis results showed that there was neither uniform nor non-uniform DIF. All Δ Nagelkerke $R^2$ values of both

**Table 2.** Descriptive Statistics and *Post Hoc* Test

| | Javanese *N = 214* *M (SD)* | Batak Toba *N = 115* *M (SD)* | Toraja *N = 108* *M (SD)* | Chinese *N = 195* *M (SD)* | Total *N = 632* *M (SD)* | *F* | η2 |
|---|---|---|---|---|---|---|---|
| PNT Bahasa Indonesia | $93.17_{a}$ (14.34) | $88.56_{b}$ (11.42) | $101.73_{c}$ (7.97) | $94.16_{a}$ (11.74) | 94.24 (12.77) | 25.41*** | .12 |
| PNT ethnic language | $72.40_{a}$ (19.51) | $30.68_{b}$ (23.20) | $64.76_{c}$ (26.61) | $13.54_{d}$ (29.27) | 46.90 (35.63) | 180.40*** | .49 |
| Bahasa Indonesia usage at home | $8.96_{a}$ (3.47) | $11.12_{b}$ (3.79) | $11.40_{b}$ (3.05) | $13.71_{c}$ (2.57) | 11.15 (3.74) | 36.27*** | .16 |
| Ethnic language usage at home | $12.02_{a}$ (3.06) | $11.12_{b}$ (4.55) | $11.05_{b}$ (3.04) | $7.82_{c}$ (2.98) | 10.46 (3.74) | 25.91*** | .12 |
| Bahasa Indonesia public usage | $74.41_{a, b}$ (12.43) | $70.92_{a}$ (25.44) | $77.64_{b}$ (15.24) | $72.22_{a}$ (16.21) | 73.78 (16.81) | 3.33* | .02 |
| Ethnic language public usage | $64.62_{a}$ (17.16) | $58.80_{b}$ (25.35) | $56.25_{b}$ (24.48) | $48.17_{c}$ (28.03) | 57.32 (24.33) | 9.15*** | .05 |
| Bahasa Indonesia self-rated fluency | $24.43_{a}$ (3.70) | $26.40_{b}$ (2.96) | $26.09_{b}$ (2.77) | $26.96_{b}$ (3.08) | 25.79 (3.42) | 15.63*** | .08 |
| Ethnic language self-rated fluency | $23.12_{a}$ (4.13) | $22.58_{a}$ (5.74) | $22.26_{a}$ (6.31) | $18.10_{b}$ (7.58) | 21.40 (6.33) | 15.65*** | .08 |

*Note*. Means with a different subscript are significantly different in a Least Significant Difference procedure ($p < .05$). All *F* ratios: $df_1 = 3$ and $df_2 = 559$. *$p < .05$. ***$p < .001$.

Bahasa Indonesia and ethnic language from all blocks for all 120 items of Picture Naming Test were below .50 (a table with Δ Nagelkerke $R^2$ values is given in the online appendix). These findings indicate that DIF had a very low impact on the size of cross cultural differences and the difficulty of words is rather similar across languages (De Mars, 2009; Jodoin & Gierl, 2001; Roussos & Stout, 1996). These findings suggest that despite the substantial differences in word knowledge, there is no evidence that these adolescents have different sets of types of words they only know in one language. What are easy and difficult words remains the same across languages. Domain specificity of word knowledge does not affect the vocabulary of these adolescents.



## DISCUSSION

We studied bilingualism in Indonesia as a truly multi-ethnic and multilingual country to understand the patterns of language dominance in groups of adolescents, to compare their Bahasa Indonesia and ethnic language usage in public and private spheres across the groups, and to examine whether the rank order of difficulty of common words is the same for Bahasa Indonesia and the ethnic languages across groups. We found similarities in Bahasa Indonesia usage in public, yet differences in language usage at home and language skill between groups. The absence of item bias can be an indicator of an equally accessible lingua franca, which is not used for power differentials in society, unlike bilingualism in many Western immigrant contexts where the country's dominant language is often the language with the highest status and where speaking the dominant language can be used as a marker of status. Education plays a crucial role in language dissemination in Indonesia. Bahasa Indonesia is taught to all students in schools, has become the language many Indonesians are most proficient in and is the single most important language in public. There is much more variation in ethnic language mastery and usage. All groups can be called bilinguals, yet with quite different patterns of bilingualism. The difference may be influenced by several factors such as speaker population size, religion, and geographical factors, such as location at an inner vs. outer island (see Abtahian, Cohn, & Pepinsky, 2016). Especially the Chinese group is not tied to a specific geographic area, whereas the other three groups are tied to certain geographical areas.

The Javanese as the most dominant group used their ethnic language the most and reported the highest fluency in the ethnic language, followed by Toraja, and Batak Toba, whereas Chinese are almost monolingual regarding their vocabulary knowledge. Although Chinese almost lost their heritage language, they still report that they use the language at home and in the public area although less than the other three groups. It is obvious that there is a huge difference on the vocabulary knowledge on ethnic language between the Chinese and the other three groups, as well as between minority Batak Toba and Toraja with Javanese. Interestingly, although there is a difference on the score of the Picture Naming Test between Batak and Toraja, there is no difference between the two groups on Bahasa Indonesia and ethnic language self-rated fluency. Hence, both groups perceived similarly how well they used the language, but they differed in the actual knowledge of the language as measured by the Picture Naming Test.

It is remarkable that although there are substantial differences on ethnic language vocabulary (the effect size was $h^2 = .49$) and all group differences on ethnic language vocabulary were

significant, DIF had only a very low, non-significant impact on the size of cross cultural differences. The absence of DIF suggests that L1 and L2 vocabulary knowledge of the adolescents in these four Indonesian ethnic groups does not show domain dependence and that the ethnic cultures do not show differential patterns of words taught to language learners. We cannot rule out that there may be ethnically specific words, related to cultural practices that adolescents only know in their ethnic language. The PNT does not tap into these specificities. So, our instrument may have underestimated the number of culturally specific words. Yet, we would not expect that these words would constitute a large part of the adolescents' lexicons.

Different from an immigration context where the host majority dominates the language usage, our results also showed that Bahasa Indonesia is the dominant language for all groups, which is remarkable compared to the findings in immigration contexts, because Bahasa Indonesia is the second language for most if not all participants. This finding confirms the previous finding that there is a rapid language shift going on across Indonesia (Abtahian et al., 2016). This study offers an interesting and nuanced lens in how this shift can be analyzed through analysis of bilingual vocabulary mastery. The pattern of language mastery across the groups was largely in line with our predictions, which supports the idea that structural characteristics, such as group size in a region, may play an important part in ethnic language and Bahasa Indonesia usage. There is also a consistent pattern of language usage in Indonesia: Toraja and Batak speak both languages regularly at home, whereas in Chinese families more Bahasa Indonesia is spoken and in Javanese families more Javanese is spoken.

Overall, our study shows how bilingualism is contextualized in Indonesia. All groups are dominant in the lingua franca, yet the knowledge and usage of their ethnic language is moderated by factors such as geographical factor, group size (bigger groups speak their ethnic language more) and political factors (Bahasa Indonesia is strongly supported in education and public life, where the use of Chinese has been forbidden in most of the second half of the previous century). Our study also shows that bilingualism comprises some domains and these domain are not strongly related to each other (e.g., high usage L1 at home, but low usage of L1 in public domain, and high score on language knowledge). Differences in language skill do not reflect differences in accessibility of languages, which are an expression of equal opportunities for all groups to engage with the language and with one another.

## LIMITATIONS

It needs to be noted that this study is correlational and not causal. Another note is that the median of parental education level is high (13-15 years of education) which may relate to the results of the higher score on Bahasa Indonesia, because high educated parents tend to speak Bahasa Indonesia more than ethnic language (e.g., Kurniasih, 2006). Another limitation is that DIF procedures require a big sample for a strong statistical power, which was not the case in the present study (see De Mars, 2009; Jodoin & Gierl, 2001; Roussos & Stout, 1996).

## CONCLUSION

The difference in patterns of bilingualism among adolescents from different ethnic groups in Indonesia is an example that bilingualism is moderated by contextual factors. Bahasa Indonesia as national language is mainly driven by education and usage in public, whereas the pattern of knowledge and usage of ethnic languages is dependent on factors such as ethnic orientation, group size, political and geographical factors. Although there are substantial differences between groups, DIF do not have a significant impact on the size of cross cultural differences, suggesting equality acquisition of Bahasa Indonesia and ethnic language vocabulary and equal power as well as access to both languages across groups. It also reflects that language usage and language knowledge are different domains of their bilingualism pattern. Therefore, we recommend using DIF procedures as an important tool for testing hypotheses about contextual characteristic of bilingualism skill among different ethnic groups. We also recommend that studies among bilinguals from different groups should include both measures of language behaviour (e.g. daily usage at home and in public area) and language skill (e.g. language vocabulary knowledge), combining L1 and L2 in at least these domains.

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# APPENDIX

## DIF Procedures and Results (Contextualized Bilingualism in Indonesia)

Differential item functioning (DIF) procedures are psychometric methods for addressing fairness in standardized achievement, aptitude, certification, and licensure testing (De Mars, 2009; Jodoin & Gierl, 2001; Roussos & Stout, 1996). These procedures reflect, to a large part, a response to the legal and ethical need to ensure that comparable examinees are treated equally. Differential item functioning (DIF) occurs in an item when examinees of equal trait levels (on the construct, or constructs, the test is intended to measure) but from separate populations differ in their probability of answering the item correctly (Roussos & Stout, 1996). According to Jodoin and Gierl (2001), uniform DIF occurs when $\beta_2 \neq 0$ and $\beta_3 = 0$, and uniform DIF favours the reference group when $\beta_2 > 0$ and the focal group when $\beta_2 < 0$. Nonuniform DIF is present when $\beta_3 \neq 0$ regardless of the value of $\beta_2$. When $\beta_3 > 0$, the item favours higher ability members of the reference group and lower ability members of the focal group. Whereas, items with negative values for $\beta_3$ favour higher ability members of the focal group and lower ability members of the reference group. For uniform DIF items difficulty parameters differed by .50 and .75, whereas for nonuniform DIF items discrimination parameters differed by .35 and .85 for the reference and focal groups (Jodoin & Gierl, 2001). We use logistic regression analyses for identifying differential item functioning (DIF), using dummies for ethnicity/culture as group membership with the dominant Javanese group as the reference group, interaction of ethnicity/culture, and interaction of number-correct PNT score and culture/ethnicity. We analysed items bias of the Picture Naming Test comparing 4 ethnic groups; Javanese, Batak, Toraja, and Chinese. We ran logistic differential item functioning (DIF) analyses for each item with 6 different blocks with dependent variables; block 1: total score of PNT of the respected language of the item; block 2: total score of PNT of Bahasa Indonesia and total score of PNT of ethnic language; block 3: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, and culture dummies; block 4: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, culture dummies, and interaction of deviance score of Bahasa Indonesia with culture; block 5: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, culture dummies, and interaction of deviance score of ethnic language with culture; block 6: total score of PNT of Bahasa Indonesia, total score of PNT of ethnic language, culture dummies, and interaction of deviance score of both languages with culture. The results of the analyses are below:

**Appendix table A.** Logistic DIF Results

| | Nagelkerke $R^2$ Bahasa Indonesia | | | | | | Nagelkerke $R^2$ Ethnic Language | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item** | **Block1** | **Block2** | **Block3** | **Block4** | **Block5** | **Block6** | **Block1** | **Block2** | **Block3** | **Block4** | **Block5** | **Block6** |
| 1. Roller Pin | .07 | .07 | .13 | .14 | .16 | .17 | .08 | .08 | .11 | .14 | .17 | .17 |
| 2. Pen | .02 | .21 | .23 | .23 | .23 | .23 | .41 | .45 | .67 | .67 | .67 | .68 |
| 3. Umbrella | .33 | .33 | .36 | .41 | .46 | .51 | .46 | .49 | .74 | .74 | .75 | .76 |
| 4. Nose | .44 | .44 | .47 | .47 | .51 | .52 | .36 | .38 | .53 | .54 | .54 | .55 |
| 5. Door knob | .19 | .19 | .24 | .25 | .25 | .26 | .10 | .11 | .12 | .12 | .14 | .15 |
| 6. Box | .09 | .09 | .10 | .11 | .13 | .13 | .21 | .22 | .39 | .41 | .45 | .45 |
| 7. Bike | .46 | .46 | .54 | .54 | .56 | .56 | .41 | .43 | .60 | .62 | .62 | .63 |
| 8. Rabbit | .49 | .51 | .52 | .52 | .62 | .67 | .29 | .29 | .43 | .43 | .44 | .45 |
| 9. Refrigerator | .08 | .35 | .38 | .38 | .42 | .42 | .33 | .33 | .51 | .51 | .52 | .52 |
| 10. Duck | .09 | .26 | .32 | .33 | .36 | .36 | .43 | .44 | .62 | .65 | .65 | .66 |
| 11. Leaf | .22 | .23 | .25 | .28 | .29 | .31 | .40 | .41 | .53 | .56 | .57 | .57 |
| 12. Coat | .17 | .17 | .19 | .23 | .24 | .26 | .11 | .13 | .16 | .19 | .20 | .21 |
| 13. Frog | .13 | .30 | .31 | .32 | .37 | .37 | .47 | .51 | .70 | .70 | .71 | .71 |
| 14. Doll | .35 | .37 | .37 | .40 | .42 | .43 | .38 | .39 | .63 | .64 | .64 | .64 |
| 15. Screwdriver | .17 | .18 | .22 | .25 | .26 | .28 | .16 | .17 | .37 | .38 | .42 | .42 |
| 16. Kettle | .18 | .18 | .24 | .27 | .28 | .29 | .42 | .45 | .64 | .65 | .66 | .66 |
| 17. Cap | .43 | .46 | .47 | .49 | .51 | .56 | .39 | .39 | .59 | .59 | .59 | .60 |
| 18. Trousers | .18 | .24 | .30 | .31 | .36 | .36 | .33 | .34 | .50 | .51 | .52 | .52 |
| 19. Brush | .11 | .25 | .60 | .62 | .62 | .62 | .39 | .41 | .54 | .55 | .55 | .56 |
| 20. Sweater | .13 | .14 | .16 | .19 | .20 | .21 | .08 | .15 | .26 | .26 | .27 | .27 |
| 21. Pineapple | .35 | .37 | .37 | .40 | .46 | .47 | .49 | .49 | .66 | .66 | .68 | .68 |
| 22. Snake | .20 | .30 | .36 | .38 | .39 | .44 | .40 | .41 | .58 | .60 | .62 | .62 |
| 23. Zebra | .32 | .32 | .36 | .37 | .38 | .41 | .25 | .28 | .38 | .41 | .44 | .46 |
| 24. Basket | .16 | .17 | .18 | .20 | .21 | .21 | .32 | .33 | .44 | .46 | .47 | .48 |
| 25. Cake | .25 | .26 | .41 | .44 | .44 | .46 | .20 | .21 | .33 | .35 | .37 | .37 |
| 26. Truck | .28 | .28 | .39 | .42 | .42 | .43 | .39 | .44 | .60 | .61 | .62 | .62 |
| 27. Blouse | .15 | .15 | .16 | .18 | .18 | .18 | .05 | .07 | .26 | .27 | .28 | .29 |
| 28. Dress | .12 | .14 | .27 | .28 | .28 | .29 | .05 | .09 | .11 | .13 | .17 | .17 |
| 29. Key | .30 | .32 | .37 | .38 | .39 | .39 | .41 | .43 | .58 | .59 | .59 | .60 |
| 30. Nail | .30 | .33 | .40 | .41 | .43 | .43 | .46 | .47 | .61 | .62 | .62 | .63 |
| 31. Butterfly | .61 | .65 | .65 | .73 | .73 | .73 | .43 | .43 | .64 | .66 | .67 | .67 |
| 32. Mouse | .28 | .28 | .31 | .37 | .38 | .38 | .38 | .38 | .58 | .60 | .60 | .61 |
| 33. Kangaroo | .09 | .13 | .18 | .21 | .24 | .25 | .28 | .29 | .44 | .46 | .47 | .48 |
| 34. Mountain | .23 | .28 | .33 | .37 | .38 | .38 | .38 | .38 | .58 | .60 | .60 | .61 |
| 35. Mushroom | .25 | .26 | .28 | .31 | .31 | .34 | .46 | .48 | .62 | .63 | .63 | .63 |
| 36. Hanger | .17 | .17 | .25 | .26 | .26 | .27 | .41 | .42. | .57 | .59 | .60 | .61 |
| 37. Lamp | .05 | .07 | .28 | .29 | .30 | .31 | .36 | .36 | .61 | .62 | .63 | .63 |
| 38. Cigar | .05 | .05 | .12 | .13 | .15 | .18 | .17 | .18 | .31 | .32 | .34 | .34 |
| 39. Balloon | .23 | .23 | .26 | .27 | .32 | .33 | .07 | .08 | .44 | .46 | .47 | .47 |
| 40. Baby carriage | .21 | .23 | .24 | .26 | .27 | .28 | .17 | .19 | .27 | .28 | .30 | .30 |
| 41. Chair | .33 | .33 | .35 | .37 | .39 | .42 | .42 | .43 | .64 | .65 | .66 | .66 |
| 42. Eye | .23 | .23 | .27 | .30 | .37 | .40 | .17 | .17 | .23 | .27 | .28 | .29 |
| 43. Drawer | .07 | .07 | .09 | .10 | .10 | .11 | .24 | .26 | .34 | .36 | .37 | .39 |
| 44. Pear | .22 | .23 | .25 | .28 | .29 | .30 | .14 | .14 | .20 | .22 | .23 | .24 |
| 45. Bell | .13 | .16 | .22 | .24 | .25 | .26 | .08 | .10 | .31 | .33 | .34 | .34 |

**Appendix table A.** (continued)

| | Nagelkerke $R^2$ Bahasa Indonesia | | | | | | Nagelkerke $R^2$ Ethnic Language | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Block1 | Block2 | Block3 | Block4 | Block5 | Block6 | Block1 | Block2 | Block3 | Block4 | Block5 | Block6 |
| 46. Hat | .19 | .19 | .21 | .22 | .28 | .28 | .30 | .31 | .52 | .55 | .55 | .57 |
| 47. Grapes | .26 | .27 | .32 | .33 | .34 | .37 | .41 | .43 | .62 | .64 | .65 | .65 |
| 48. Fork | .22 | .22 | .25 | .26 | .27 | .31 | .09 | .19 | .32 | .35 | .36 | .36 |
| 49. Helicopter | .38 | .38 | .39 | .40 | .41 | .41 | .29 | .30 | .40 | .41 | .42 | .43 |
| 50. Bulb-lamp | .01 | .20 | .46 | .47 | .49 | .50 | .12 | .19 | .27 | .32 | .32 | .34 |
| 51. Ruler | .18 | .19 | .21 | .22 | .26 | .26 | .22 | .22 | .29 | .32 | .33 | .33 |
| 52. Seal | .26 | .26 | .27 | .29 | .30 | .30 | .08 | .10 | .17 | .20 | .22 | .22 |
| 53. Car | .25 | .26 | .27 | .27 | .28 | .30 | .04 | .13 | .42 | .43 | .43 | .44 |
| 54. Wrench | .13 | .13 | .13 | .14 | .16 | .16 | .10 | .10 | .19 | .22 | .23 | .24 |
| 55. Rhino | .19 | .20 | .21 | .23 | .24 | .28 | .38 | .38 | .54 | .56 | .56 | .56 |
| 56. Donkey | .25 | .25 | .25 | .27 | .28 | .29 | .04 | .09 | .27 | .29 | .30 | .31 |
| 57. Hammer | .22 | .23 | .25 | .25 | .27 | .28 | .10 | .10 | .33 | .36 | .37 | .37 |
| 58. Horse | .35 | .36 | .38 | .39 | .42 | .42 | .18 | .18 | .23 | .24 | .25 | .26 |
| 59. Whistle | .10 | .10 | .13 | .14 | .15 | .15 | .27 | .28 | .40 | .42 | .43 | .43 |
| 60. Sandwich | .38 | .39 | .47 | .47 | .49 | .49 | .13 | .16 | .22 | .23 | .24 | .25 |
| 61. Sock | .15 | .16 | .31 | .32 | .33 | .35 | .27 | .27 | .40 | .41 | .43 | .44 |
| 62. Rocking chair | .19 | .20 | .22 | .23 | .25 | .27 | .21 | .24 | .35 | .38 | .38 | .39 |
| 63. Hand | .15 | .15 | .44 | .47 | .48 | .48 | .01 | .04 | .34 | .36 | .36 | .37 |
| 64. Strawberry | .15 | .16 | .33 | .37 | .38 | .40 | .32 | .33 | .47 | .48 | .49 | .49 |
| 65. Clamp | .19 | .19 | .27 | .27 | .29 | .31 | .13 | .17 | .26 | .28 | .30 | .31 |
| 66. Paint brush | .23 | .24 | .29 | .31 | .33 | .35 | .24 | .25 | .36 | .38 | .39 | .39 |
| 67. Flag | .26 | .26 | .28 | .33 | .42 | .43 | .26 | .28 | .45 | .46 | .46 | .47 |
| 68. Clown | .18 | .19 | .24 | .26 | .28 | .29 | .33 | .34 | .53 | .55 | .56 | .56 |
| 69. Watermelon | .28 | .28 | .38 | .39 | .46 | .47 | .31 | .32 | .53 | .55 | .56 | .56 |
| 70. Anchor | .20 | .21 | .28 | .31 | .33 | .34 | .29 | .29 | .45 | .46 | .47 | .47 |
| 71. Rooster | .16 | .16 | .20 | .21 | .22 | .22 | .20 | .21 | .29 | .30 | .32 | .33 |
| 72. Glass | .17 | .18 | .24 | .27 | .29 | .30 | .39 | .40 | .58 | .59 | .60 | .60 |
| 73. Hen | .22 | .22 | .31 | .32 | .32 | .32 | .22 | .27 | .40 | .44 | .46 | .46 |
| 74. Pipe | .05 | .05 | .09 | .10 | .11 | .12 | .13 | .16 | .31 | .33 | .35 | .36 |
| 75. Pan | .16 | .16 | .17 | .17 | .18 | .18 | .20 | .20 | .39 | .41 | .43 | .44 |
| 76. Windmill | .15 | .19 | .22 | .23 | .25 | .26 | .14 | .16 | .20 | .21 | .21 | .22 |
| 77. Corn | .31 | .31 | .34 | .37 | .39 | .46 | .43 | .43 | .60 | .61 | .63 | .63 |
| 78. Moon | .19 | .23 | .24 | .24 | .27 | .28 | .06 | .11 | .12 | .15 | .17 | .18 |
| 79. Salt shaker | .19 | .25 | .51 | .55 | .58 | .58 | .04 | .04 | .11 | .15 | .16 | .16 |
| 80. Arrow | .13 | .13 | .19 | .23 | .24 | .25 | .20 | .21 | .30 | .32 | .34 | .35 |
| 81. Turtle | .26 | .26 | .28 | .30 | .32 | .33 | .27 | .29 | .41 | .42 | .43 | .43 |
| 82. Harp | .15 | .20 | .36 | .36 | .37 | .38 | .17 | .17 | .27 | .29 | .29 | .30 |
| 83. Stool | .04 | .12 | .22 | .26 | .29 | .30 | .20 | .23 | .35 | .38 | .40 | .40 |
| 84. Church | .21 | .21 | .24 | .24 | .26 | .26 | .38 | .39 | .62 | .63 | .64 | .65 |
| 85. Nut | .18 | .19 | .21 | .24 | .25 | .26 | .19 | .20 | .35 | .36 | .38 | .39 |
| 86. Motorbike | .21 | .21 | .35 | .36 | .36 | .37 | .26 | .26 | .38 | .39 | .39 | .40 |
| 87. Flower | .35 | .35 | .37 | .38 | .41 | .43 | .25 | .25 | .41 | .42 | .43 | .43 |
| 88. Traffic light | .19 | .25 | .36 | .38 | .39 | .40 | .26 | .26 | .49 | .50 | .51 | .52 |
| 89. Goat | .23 | .23 | .25 | .26 | .27 | .27 | .25 | .26 | .41 | .41 | .43 | .43 |
| 90. Cup | .15 | .16 | .19 | .22 | .23 | .23 | .32 | .34 | .47 | .48 | .49 | .50 |
| 91. Camel | .32 | .32 | .38 | .56 | .59 | .59 | .39 | .39 | .68 | .68 | .69 | .69 |

**Appendix table A.** (continued)

| | Nagelkerke $R^2$ Bahasa Indonesia | | | | | | Nagelkerke $R^2$ Ethnic Language | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Block1 | Block2 | Block3 | Block4 | Block5 | Block6 | Block1 | Block2 | Block3 | Block4 | Block5 | Block6 |
| 92. Train | .16 | .18 | .30 | .30 | .31 | .32 | .32 | .33 | .58 | .60 | .62 | .62 |
| 93. Ant | .34 | .34 | .36 | .39 | .41 | .43 | .40 | .43 | .58 | .58 | .60 | .60 |
| 94. Dog | .42 | .42 | .47 | .50 | .53 | .53 | .27 | .32 | .47 | .51 | .52 | .53 |
| 95. Tooth Brush | .25 | .25 | .31 | .32 | .32 | .33 | .19 | .21 | .26 | .27 | .28 | .29 |
| 96. Swan | .26 | .30 | .34 | .35 | .36 | .37 | .15 | .15 | .25 | .26 | .27 | .27 |
| 97. Saw | .38 | .42 | .51 | .53 | .57 | .60 | .27 | .28 | .39 | .40 | .41 | .41 |
| 98. Violin | .16 | .16 | .18 | .20 | .22 | .24 | .34 | .36 | .60 | .60 | .62 | .62 |
| 99. Thread | .22 | .22 | .23 | .24 | .25 | .27 | .21 | .23 | .34 | .35 | .38 | .38 |
| 100. Bat | .17 | .17 | .19 | .20 | .21 | .22 | .04 | .04 | .08 | .10 | .12 | .13 |
| 101. Star | .43 | .44 | .47 | .50 | .53 | .54 | .11 | .13 | .21 | .21 | .22 | .22 |
| 102. Cigarette | .17 | .18 | .19 | .24 | .26 | .27 | .26 | .26 | .44 | .45 | .50 | .51 |
| 103. Pitcher | .30 | .30 | .35 | .38 | .39 | .40 | .21 | .22 | .38 | .40 | .41 | .41 |
| 104. Envelope | .06 | .09 | .14 | .15 | .16 | .17 | .39 | .40 | .59 | .63 | .64 | .64 |
| 105. Drum | .31 | .31 | .42 | .47 | .48 | .49 | .27 | .28 | .41 | .42 | .43 | .44 |
| 106. Spoon | .10 | .12 | .13 | .17 | .21 | .23 | .33 | .33 | .49 | .49 | .51 | .51 |
| 107. TV | .13 | .22 | .26 | .27 | .29 | .30 | .31 | .32 | .51 | .53 | .53 | .53 |
| 108. Pencil | .24 | .24 | .25 | .28 | .33 | .33 | .23 | .23 | .30 | .34 | .35 | .36 |
| 109. Wheel | .14 | .17 | .20 | .22 | .22 | .24 | .15 | .15 | .22 | .23 | .25 | .26 |
| 110. Iron | .24 | .24 | .25 | .26 | .28 | .30 | .34 | .34 | .56 | .57 | .58 | .59 |
| 111. Apple | .30 | .31 | .34 | .35 | .36 | .38 | .23 | .23 | .44 | .44 | .46 | .46 |
| 112. Scissors | .17 | .18 | .24 | .25 | .26 | .28 | .39 | .40 | .61 | .62 | .63 | .63 |
| 113. Canon | .14 | .14 | .20 | .22 | .24 | .24 | .22 | .22 | .37 | .38 | .39 | .39 |
| 114. Shirt | .10 | .12 | .22 | .23 | .24 | .26 | .16 | .19 | .30 | .31 | .31 | .31 |
| 115. Caterpillar | .31 | .31 | .32 | .34 | .35 | .36 | .34 | .34 | .51 | .51 | .52 | .52 |
| 116. Owl | .20 | .21 | .24 | .25 | .27 | .27 | .17 | .23 | .34 | .35 | .36 | .36 |
| 117. Bus | .17 | .17 | .22 | .23 | .23 | .24 | .30 | .30 | .50 | .51 | .52 | .52 |
| 118. Bug | .23 | .25 | .26 | .28 | .28 | .28 | .14 | .17 | .24 | .25 | .26 | .26 |
| 119. Axe | .16 | .18 | .23 | .25 | .25 | .26 | .10 | .12 | .20 | .21 | .24 | .25 |
| 120. Switch button | .15 | .17 | .21 | .22 | .24 | .24 | .30 | .31 | .56 | .57 | .58 | .58 |

**Appendix table B.** Logistic DIF Results Bahasa Indonesia

| Item | Δ Nagelkerke $R^2$ Bahasa Indonesia | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 1. Roller Pin | .00 | .06 | .06 | .01 | .02 | .01 | .03 | .04 |
| 2. Pen | .19 | .02 | .21 | .00 | .00 | .00 | .00 | .00 |
| 3. Umbrella | .00 | .03 | .03 | .05 | .05 | .05 | .10 | .15 |
| 4. Nose | .00 | .03 | .03 | .00 | .04 | .01 | .05 | .05 |
| 5. Door knob | .00 | .05 | .05 | .01 | .00 | .01 | .01 | .02 |
| 6. Box | 0 | .01 | .01 | .01 | .02 | .00 | .02 | .03 |
| 7. Bike | 0 | .08 | .08 | .00 | .02 | .00 | .02 | .02 |
| 8. Rabbit | .02 | .01 | .03 | .00 | .10 | .05 | .15 | .15 |
| 9. Refrigerator | .27 | .03 | .30 | .00 | .04 | .00 | .04 | .04 |

**Appendix table B.** (continued)

| | Δ Nagelkerke $R^2$ Bahasa Indonesia | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 10. Duck | .17 | .06 | .23 | .01 | .03 | .00 | .03 | .04 |
| 11. Leaf | .01 | .02 | .03 | .03 | .01 | .02 | .03 | .06 |
| 12. Coat | .00 | .02 | .02 | .04 | .01 | .02 | .03 | .07 |
| 13. Frog | .17 | .01 | .18 | .01 | .05 | .00 | .05 | .06 |
| 14. Doll | .02 | .00 | .02 | .03 | .02 | .01 | .03 | .06 |
| 15. Screwdriver | .01 | .04 | .05 | .03 | .01 | .02 | .03 | .06 |
| 16. Kettle | .00 | .06 | .06 | .03 | .01 | .01 | .02 | .05 |
| 17. Cap | .03 | .01 | .04 | .02 | .02 | .05 | .07 | .09 |
| 18. Trousers | .06 | .06 | .12 | .01 | .05 | .00 | .05 | .06 |
| 19. Brush | .14 | .35 | .49 | .02 | .00 | .00 | .00 | .02 |
| 20. Sweater | .01 | .02 | .03 | .03 | .01 | .01 | .02 | .05 |
| 21. Pineapple | .02 | .00 | .02 | .03 | .06 | .01 | .07 | .10 |
| 22. Snake | .10 | .06 | .16 | .02 | .01 | .05 | .06 | .08 |
| 23. Zebra | .00 | .04 | .04 | .01 | .01 | .03 | .04 | .05 |
| 24. Basket | .01 | .01 | .02 | .02 | .01 | .00 | .01 | .03 |
| 25. Cake | .01 | .15 | .16 | .03 | .00 | .02 | .02 | .05 |
| 26. Truck | .00 | .11 | .11 | .03 | .00 | .01 | .01 | .04 |
| 27. Blouse | .00 | .01 | .01 | .02 | .00 | .00 | .00 | .02 |
| 28. Dress | .02 | .13 | .15 | .01 | .00 | .01 | .01 | .02 |
| 29. Key | .02 | .05 | .07 | .01 | .01 | .00 | .01 | .02 |
| 30. Nail | .03 | .07 | .10 | .01 | .02 | .00 | .02 | .03 |
| 31. Butterfly | .04 | .00 | .04 | .08 | .00 | .00 | .00 | .08 |
| 32. Mouse | .00 | .03 | .03 | .06 | .01 | .00 | .01 | .07 |
| 33. Kangaroo | .04 | .05 | .09 | .03 | .03 | .01 | .04 | .07 |
| 34. Mountain | .05 | .05 | .10 | .04 | .01 | .00 | .01 | .05 |
| 35. Mushroom | .01 | .02 | .03 | .03 | .00 | .03 | .03 | .06 |
| 36. Hanger | .00 | .08 | .08 | .01 | .00 | .01 | .01 | .02 |
| 37. Lamp | .02 | .21 | .23 | .01 | .01 | .01 | .02 | .03 |
| 38. Cigar | .00 | .07 | .07 | .01 | .02 | .03 | .05 | .06 |
| 39. Balloon | .00 | .03 | .03 | .01 | .05 | .01 | .06 | .07 |
| 40. Baby carriage | .02 | .01 | .03 | .02 | .01 | .01 | .02 | .04 |
| 41. Chair | .00 | .02 | .02 | .02 | .02 | .03 | .05 | .07 |
| 42. Eye | .00 | .04 | .04 | .03 | .07 | .03 | .10 | .13 |
| 43. Drawer | .00 | .02 | .02 | .01 | .00 | .01 | .01 | .02 |
| 44. Pear | .01 | .02 | .03 | .03 | .01 | .01 | .02 | .05 |
| 45. Bell | .03 | .06 | .09 | .02 | .01 | .01 | .02 | .04 |
| 46. Hat | .00 | .02 | .02 | .01 | .06 | .00 | .06 | .07 |
| 47. Grapes | .01 | .05 | .06 | .01 | .01 | .03 | .04 | .05 |
| 48. Fork | .00 | .03 | .03 | .01 | .01 | .04 | .05 | .06 |
| 49. Helicopter | .00 | .01 | .01 | .01 | .01 | .00 | .01 | .02 |
| 50. Bulb-lamp | .19 | .26 | .45 | .01 | .02 | .01 | .03 | .04 |
| 51. Ruler | .01 | .02 | .03 | .01 | .04 | .00 | .04 | .05 |
| 52. Seal | .00 | .01 | .01 | .02 | .01 | .00 | .01 | .03 |
| 53. Car | .01 | .01 | .02 | .00 | .01 | .02 | .03 | .03 |
| 54. Wrench | .00 | .00 | .00 | .01 | .02 | .00 | .02 | .03 |
| 55. Rhino | .01 | .01 | .02 | .02 | .01 | .04 | .05 | .07 |

**Appendix table B.** (continued)

| | Δ Nagelkerke $R^2$ Bahasa Indonesia | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 56. Donkey | .00 | .00 | .00 | .02 | .01 | .01 | .02 | .04 |
| 57. Hammer | .01 | .02 | .03 | .00 | .02 | .01 | .03 | .03 |
| 58. Horse | .01 | .02 | .03 | .01 | .03 | .00 | .03 | .04 |
| 59. Whistle | .00 | .03 | .03 | .01 | .01 | .00 | .01 | .02 |
| 60. Sandwich | .01 | .08 | .09 | .00 | .02 | .00 | .02 | .02 |
| 61. Sock | .01 | .15 | .16 | .01 | .01 | .02 | .03 | .04 |
| 62. Rocking chair | .01 | .02 | .03 | .01 | .02 | .02 | .04 | .05 |
| 63. Hand | .00 | .29 | .29 | .03 | .01 | .00 | .01 | .04 |
| 64. Strawberry | .01 | .17 | .18 | .04 | .01 | .02 | .03 | .07 |
| 65. Clamp | .00 | .08 | .08 | .00 | .02 | .02 | .04 | .04 |
| 66. Paint brush | .01 | .05 | .06 | .02 | .02 | .02 | .04 | .06 |
| 67. Flag | .00 | .02 | .02 | .05 | .09 | .01 | .10 | .15 |
| 68. Clown | .01 | .05 | .06 | .02 | .02 | .01 | .03 | .05 |
| 69. Watermelon | .00 | .10 | .10 | .10 | .07 | .01 | .08 | .09 |
| 70. Anchor | .01 | .07 | .08 | .03 | .02 | .01 | .03 | .06 |
| 71. Rooster | .00 | .04 | .04 | .01 | .01 | .00 | .01 | .02 |
| 72. Glass | .01 | .06 | .07 | .03 | .02 | .01 | .03 | .06 |
| 73. Hen | .00 | .09 | .09 | .01 | .00 | .00 | .00 | .01 |
| 74. Pipe | .00 | .04 | .04 | .01 | .01 | .01 | .02 | .03 |
| 75. Pan | .00 | .01 | .01 | .00 | .01 | .00 | .01 | .01 |
| 76. Windmill | .04 | .03 | .07 | .01 | .02 | .01 | .03 | .04 |
| 77. Corn | .00 | .03 | .03 | .03 | .02 | .07 | .09 | .12 |
| 78. Moon | .04 | .01 | .05 | .00 | .03 | .01 | .04 | .04 |
| 79. Salt shaker | .06 | .26 | .32 | .04 | .03 | .00 | .03 | .07 |
| 80. Arrow | .00 | .06 | .06 | .04 | .01 | .01 | .02 | .06 |
| 81. Turtle | .00 | .02 | .02 | .02 | .02 | .01 | .03 | .05 |
| 82. Harp | .05 | .16 | .21 | .00 | .01 | .01 | .02 | .02 |
| 83. Stool | .08 | .10 | .18 | .04 | .03 | .01 | .04 | .08 |
| 84. Church | .00 | .03 | .03 | .00 | .02 | .00 | .02 | .02 |
| 85. Nut | .01 | .02 | .03 | .03 | .01 | .01 | .02 | .05 |
| 86. Motorbike | .00 | .14 | .14 | .01 | .00 | .01 | .01 | .02 |
| 87. Flower | .00 | .02 | .02 | .01 | .03 | .02 | .05 | .06 |
| 88. Traffic light | .06 | .11 | .17 | .02 | .01 | .01 | .02 | .04 |
| 89. Goat | .00 | .02 | .02 | .01 | .01 | .00 | .01 | .02 |
| 90. Cup | .01 | .03 | .04 | .03 | .01 | .00 | .01 | .04 |
| 91. Camel | .00 | .06 | .06 | .18 | .03 | .00 | .03 | .21 |
| 92. Train | .02 | .12 | .14 | .00 | .01 | .01 | .02 | .02 |
| 93. Ant | .00 | .02 | .02 | .03 | .02 | .02 | .04 | .07 |
| 94. Dog | .00 | .05 | .05 | .03 | .03 | .00 | .03 | .06 |
| 95. Tooth Brush | .00 | .06 | .06 | .01 | .00 | .01 | .01 | .02 |
| 96. Swan | .04 | .04 | .08 | .01 | .01 | .01 | .02 | .03 |
| 97. Saw | .04 | .09 | .13 | .02 | .04 | .03 | .07 | .09 |
| 98. Violin | .00 | .02 | .02 | .02 | .02 | .02 | .04 | .06 |
| 99. Thread | .00 | .01 | .01 | .01 | .01 | .02 | .03 | .04 |
| 100. Bat | .00 | .02 | .02 | .01 | .01 | .01 | .02 | .03 |
| 101. Star | .01 | .03 | .04 | .03 | .03 | .01 | .04 | .07 |

**Appendix table B.** (continued)

| | Δ Nagelkerke $R^2$ Bahasa Indonesia | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 102. Cigarette | .01 | .01 | .02 | .05 | .02 | .01 | .03 | .08 |
| 103. Pitcher | .00 | .05 | .05 | .03 | .01 | .01 | .02 | .05 |
| 104. Envelope | .03 | .05 | .08 | .01 | .01 | .01 | .02 | .03 |
| 105. Drum | .00 | .11 | .11 | .05 | .01 | .01 | .02 | .07 |
| 106. Spoon | .02 | .01 | .03 | .04 | .04 | .02 | .06 | .10 |
| 107. TV | .09 | .04 | .13 | .01 | .02 | .01 | .03 | .04 |
| 108. Pencil | .00 | .01 | .01 | .03 | .05 | .00 | .05 | .08 |
| 109. Wheel | .03 | .03 | .06 | .02 | .00 | .02 | .02 | .04 |
| 110. Iron | .00 | .01 | .01 | .01 | .02 | .02 | .04 | .05 |
| 111. Apple | .01 | .03 | .04 | .01 | .01 | .02 | .03 | .04 |
| 112. Scissors | .01 | .06 | .07 | .01 | .01 | .02 | .03 | .04 |
| 113. Canon | .00 | .06 | .06 | .02 | .02 | .00 | .02 | .04 |
| 114. Shirt | .02 | .10 | .12 | .01 | .01 | .02 | .03 | .04 |
| 115. Caterpillar | .00 | .01 | .01 | .02 | .01 | .01 | .02 | .04 |
| 116. Owl | .01 | .03 | .04 | .01 | .02 | .00 | .02 | .03 |
| 117. Bus | .00 | .05 | .05 | .01 | .00 | .01 | .01 | .02 |
| 118. Bug | .02 | .01 | .03 | .02 | .00 | .00 | .00 | .02 |
| 119. Axe | .02 | .05 | .07 | .02 | .00 | .01 | .01 | .03 |
| 120. Switch button | .02 | .04 | .06 | .01 | .02 | .00 | .02 | .03 |

**Appendix table C.** Logistic DIF Results Ethnic Language

| | Δ Nagelkerke $R^2$ Ethnic Language | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 1. Roller Pin | .00 | .03 | .03 | .03 | .03 | .00 | .03 | .06 |
| 2. Pen | .04 | .22 | .26 | .00 | .00 | .01 | .01 | .01 |
| 3. Umbrella | .03 | .25 | .28 | .00 | .01 | .01 | .02 | .02 |
| 4. Nose | .02 | .15 | .17 | .01 | .00 | .01 | .01 | .02 |
| 5. Door knob | .01 | .01 | .02 | .00 | .02 | .01 | .03 | .03 |
| 6. Box | .01 | .17 | .18 | .02 | .04 | .00 | .04 | .06 |
| 7. Bike | .02 | .17 | .19 | .02 | .00 | .01 | .01 | .03 |
| 8. Rabbit | .00 | .14 | .14 | .00 | .01 | .01 | .02 | .02 |
| 9. Refrigerator | .00 | .18 | .18 | .00 | .01 | .00 | .01 | .01 |
| 10. Duck | .01 | .18 | .19 | .03 | .00 | .01 | .01 | .04 |
| 11. Leaf | .01 | .12 | .13 | .03 | .01 | .00 | .01 | .04 |
| 12. Coat | .02 | .03 | .05 | .03 | .01 | .01 | .02 | .05 |
| 13. Frog | .04 | .19 | .23 | .00 | .01 | .00 | .01 | .01 |
| 14. Doll | .01 | .24 | .25 | .01 | .00 | .00 | .00 | .01 |
| 15. Screwdriver | .01 | .20 | .21 | .01 | .04 | .00 | .04 | .05 |
| 16. Kettle | .03 | .19 | .22 | .01 | .01 | .00 | .01 | .02 |
| 17. Cap | .00 | .20 | .20 | .00 | .00 | .01 | .01 | .01 |
| 18. Trousers | .01 | .16 | .17 | .01 | .01 | .00 | .01 | .02 |
| 19. Brush | .02 | .13 | .15 | .01 | .00 | .01 | .01 | .02 |

**Appendix table C.** (continued)

| | Δ Nagelkerke $R^2$ Ethnic Language | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 20. Sweater | .07 | .11 | .18 | .00 | .01 | .00 | .01 | .01 |
| 21. Pineapple | .00 | .17 | .17 | .00 | .02 | .00 | .02 | .02 |
| 22. Snake | .01 | .17 | .18 | .02 | .02 | .00 | .02 | .04 |
| 23. Zebra | .03 | .10 | .13 | .03 | .03 | .02 | .05 | .08 |
| 24. Basket | .01 | .11 | .12 | .02 | .01 | .01 | .02 | .04 |
| 25. Cake | .01 | .12 | .13 | .02 | .02 | .00 | .02 | .04 |
| 26. Truck | .05 | .16 | .21 | .01 | .01 | .00 | .01 | .02 |
| 27. Blouse | .02 | .19 | .21 | .01 | .01 | .01 | .02 | .03 |
| 28. Dress | .04 | .02 | .06 | .02 | .04 | .00 | .04 | .06 |
| 29. Key | .02 | .15 | .17 | .01 | .00 | .01 | .01 | .02 |
| 30. Nail | .01 | .14 | .15 | .01 | .00 | .01 | .01 | .02 |
| 31. Butterfly | .00 | .21 | .21 | .02 | .01 | .00 | .01 | .03 |
| 32. Mouse | .00 | .20 | .20 | .02 | .00 | .01 | .01 | .03 |
| 33. Kangaroo | .01 | .15 | .16 | .02 | .01 | .01 | .02 | .04 |
| 34. Mountain | .00 | .20 | .20 | .02 | .00 | .01 | .01 | .03 |
| 35. Mushroom | .02 | .14 | .16 | .01 | .00 | .00 | .00 | .01 |
| 36. Hanger | .01 | .15 | .16 | .02 | .01 | .01 | .02 | .04 |
| 37. Lamp | .00 | .25 | .25 | .01 | .01 | .00 | .01 | .02 |
| 38. Cigar | .01 | .13 | .14 | .01 | .02 | .00 | .02 | .03 |
| 39. Balloon | .01 | .36 | .37 | .02 | .01 | .00 | .01 | .03 |
| 40. Baby carriage | .02 | .08 | .10 | .01 | .02 | .00 | .02 | .03 |
| 41. Chair | .01 | .21 | .22 | .01 | .01 | .00 | .01 | .02 |
| 42. Eye | .00 | .06 | .06 | .04 | .01 | .01 | .02 | .06 |
| 43. Drawer | .02 | .08 | .10 | .02 | .01 | .02 | .03 | .05 |
| 44. Pear | .00 | .06 | .06 | .02 | .01 | .01 | .02 | .04 |
| 45. Bell | .02 | .21 | .23 | .02 | .01 | .00 | .01 | .03 |
| 46. Hat | .01 | .21 | .22 | .03 | .00 | .02 | .02 | .05 |
| 47. Grapes | .02 | .19 | .21 | .02 | .01 | .00 | .01 | .03 |
| 48. Fork | 0.1 | .13 | .23 | .03 | .01 | .00 | .01 | .04 |
| 49. Helicopter | .01 | .10 | .11 | .01 | .01 | .01 | .02 | .03 |
| 50. Bulb-lamp | .07 | .08 | .15 | .05 | .00 | .02 | .02 | .07 |
| 51. Ruler | .00 | .07 | .07 | .03 | .01 | .00 | .01 | .04 |
| 52. Seal | .02 | .07 | .09 | .03 | .02 | .00 | .02 | .05 |
| 53. Car | .09 | .29 | .38 | .01 | .00 | .01 | .01 | .02 |
| 54. Wrench | .00 | .09 | .09 | .03 | .01 | .01 | .02 | .05 |
| 55. Rhino | .00 | .16 | .16 | .02 | .00 | .00 | .00 | .02 |
| 56. Donkey | .05 | .18 | .23 | .02 | .01 | .01 | .02 | .04 |
| 57. Hammer | .00 | .23 | .23 | .03 | .01 | .00 | .01 | .04 |
| 58. Horse | .00 | .05 | .05 | .01 | .01 | .01 | .02 | .03 |
| 59. Whistle | .01 | .12 | .13 | .02 | .01 | .00 | .01 | .03 |
| 60. Sandwich | .03 | .06 | .09 | .01 | .01 | .01 | .02 | .03 |
| 61. Sock | .00 | .13 | .13 | .01 | .02 | .01 | .03 | .04 |
| 62. Rocking chair | .03 | .11 | .14 | .03 | .00 | .01 | .01 | .04 |
| 63. Hand | .03 | .30 | .33 | .02 | .00 | .01 | .01 | .03 |
| 64. Strawberry | .01 | .14 | .15 | .01 | .01 | .00 | .01 | .02 |
| 65. Clamp | .04 | .09 | .13 | .02 | .02 | .01 | .03 | .05 |

**Appendix table C.** (continued)

| | Δ Nagelkerke $R^2$ Ethnic Language | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 66. Paint brush | .01 | .11 | .12 | .02 | .01 | .00 | .01 | .03 |
| 67. Flag | .02 | .17 | .19 | .01 | .00 | .01 | .01 | .02 |
| 68. Clown | .01 | .19 | .20 | .02 | .01 | .00 | .01 | .03 |
| 69. Watermelon | .01 | .21 | .22 | .02 | .01 | .00 | .01 | .03 |
| 70. Anchor | .00 | .16 | .16 | .01 | .01 | .00 | .01 | .02 |
| 71. Rooster | .01 | .08 | .09 | .01 | .02 | .01 | .03 | .04 |
| 72. Glass | .01 | .18 | .19 | .01 | .01 | .00 | .01 | .02 |
| 73. Hen | .05 | .13 | .18 | .04 | .02 | .00 | .02 | .06 |
| 74. Pipe | .03 | .15 | .18 | .02 | .02 | .01 | .03 | .05 |
| 75. Pan | .00 | .19 | .19 | .02 | .02 | .01 | .03 | .05 |
| 76. Windmill | .02 | .04 | .06 | .01 | .00 | .01 | .01 | .02 |
| 77. Corn | .00 | .17 | .17 | .01 | .02 | .00 | .02 | .03 |
| 78. Moon | .05 | .01 | .06 | .03 | .02 | .01 | .03 | .06 |
| 79. Salt shaker | .00 | .07 | .07 | .04 | .01 | .00 | .01 | .05 |
| 80. Arrow | .01 | .09 | .10 | .02 | .02 | .01 | .03 | .05 |
| 81. Turtle | .02 | .12 | .14 | .01 | .01 | .00 | .01 | .02 |
| 82. Harp | .00 | .10 | .10 | .02 | .00 | .01 | .01 | .03 |
| 83. Stool | .03 | .12 | .15 | .03 | .02 | .00 | .02 | .05 |
| 84. Church | .01 | .23 | .24 | .01 | .01 | .01 | .02 | .03 |
| 85. Nut | .01 | .15 | .16 | .01 | .02 | .01 | .03 | .04 |
| 86. Motorbike | .00 | .12 | .12 | .01 | .00 | .01 | .01 | .02 |
| 87. Flower | .00 | .16 | .16 | .01 | .01 | .00 | .01 | .02 |
| 88. Traffic light | .00 | .23 | .23 | .01 | .01 | .01 | .02 | .03 |
| 89. Goat | .01 | .15 | .16 | .00 | .02 | .00 | .02 | .02 |
| 90. Cup | .02 | .13 | .15 | .01 | .01 | .01 | .02 | .03 |
| 91. Camel | .00 | .29 | .29 | .00 | .01 | .00 | .01 | .01 |
| 92. Train | .01 | .25 | .26 | .02 | .02 | .00 | .02 | .04 |
| 93. Ant | .03 | .15 | .18 | .00 | .02 | .00 | .02 | .02 |
| 94. Dog | .05 | .15 | .20 | .04 | .01 | .01 | .02 | .06 |
| 95. Tooth Brush | .02 | .05 | .07 | .01 | .01 | .01 | .02 | .03 |
| 96. Swan | .00 | .10 | .10 | .01 | .01 | .00 | .01 | .02 |
| 97. Saw | .01 | .11 | .12 | .01 | .01 | .00 | .01 | .02 |
| 98. Violin | .02 | .24 | .26 | .00 | .02 | .00 | .02 | .02 |
| 99. Thread | .02 | .11 | .13 | .01 | .03 | .00 | .03 | .04 |
| 100. Bat | .00 | .04 | .04 | .02 | .02 | .01 | .03 | .05 |
| 101. Star | .02 | .08 | .10 | .00 | .01 | .00 | .01 | .01 |
| 102. Cigarette | .00 | .18 | .18 | .01 | .05 | .01 | .06 | .07 |
| 103. Pitcher | .01 | .16 | .17 | .02 | .01 | .00 | .01 | .03 |
| 104. Envelope | .01 | .19 | .20 | .04 | .01 | .00 | .01 | .05 |
| 105. Drum | .01 | .13 | .14 | .01 | .01 | .01 | .02 | .03 |
| 106. Spoon | .00 | .16 | .16 | .00 | .02 | .00 | .02 | .02 |
| 107. TV | .01 | .19 | .20 | .02 | .00 | .00 | .00 | .02 |
| 108. Pencil | .00 | .07 | .07 | .04 | .01 | .01 | .02 | .06 |
| 109. Wheel | .00 | .07 | .07 | .01 | .02 | .01 | .03 | .04 |
| 110. Iron | .00 | .22 | .22 | .01 | .01 | .01 | .02 | .03 |
| 111. Apple | .00 | .21 | .21 | .00 | .02 | .00 | .02 | .02 |

**Appendix table C.** (continued)

| | Δ Nagelkerke $R^2$ Ethnic Language | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Item** | $R^2_2 - R^2_1$ | $R^2_3 - R^2_2$ | $R^2_3 - R^2_1$ | $R^2_4 - R^2_3$ | $R^2_5 - R^2_4$ | $R^2_6 - R^2_5$ | $R^2_6 - R^2_4$ | $R^2_6 - R^2_3$ |
| 112. Scissors | .01 | .21 | .22 | .01 | .01 | .00 | .01 | .02 |
| 113. Canon | .00 | .15 | .15 | .01 | .01 | .00 | .01 | .02 |
| 114. Shirt | .03 | .11 | .14 | .01 | .00 | .00 | .00 | .01 |
| 115. Caterpillar | .00 | .17 | .17 | .00 | .01 | .00 | .01 | .01 |
| 116. Owl | .06 | .11 | .17 | .01 | .01 | .00 | .01 | .02 |
| 117. Bus | .00 | .20 | .20 | .01 | .01 | .00 | .01 | .02 |
| 118. Bug | .03 | .07 | .10 | .01 | .01 | .00 | .01 | .02 |
| 119. Axe | .02 | .08 | .10 | .01 | .03 | .01 | .04 | .05 |
| 120. Switch button | .01 | .25 | .26 | .01 | .01 | .00 | .01 | .02 |

# CHAPTER 6

## GENERAL DISCUSSION

# GENERAL DISCUSSION



The objective of this chapter is to provide a general discussion that integrates the empirical works presented in this thesis, as it is presented in the conceptual model in Figure 1 of Chapter 1. In this chapter, the main research questions and empirical findings are reviewed followed by a discussion that sets out to describe the relationship between parental cultural maintenance behavior, ethnic identity, bilingualism, sociocultural adjustment, and well-being in an integrative manner. Here I discuss whether bilingualism in a non-immigration, multicultural context, outside WEIRD countries, Indonesia in my study, is different from or similar to bilingualism in an immigration context. From the findings of the studies in this project, I also contribute in providing information about how the relation between bilingualism with positive or negative psychological outcomes is moderated by contextual factors such as group size and political factors, the question that is remained unsolved by previous studies among bilingual adolescents (e.g., Adler, 1977; Bialystok, 1999; Birman, 1998; Rudmin, 2003; Tran, 1994).

The project sampled different ethnic groups in Indonesia, as a unique multicultural context, to explore how bilingualism pattern differs between ethnic groups, how and why bilingualism in Indonesia differs or is similar across ethnic groups, how bilingualism may differ because of the different context and how bilingualism is contextualized in different domains, and how and why are language usage and language ability of both national and ethnic language important for identity, sociocultural adjustment, and well-being among non-immigrant groups who live in multicultural and multilingual countries although there are variations in language usage and bilingualism ability.

It is important to note that data were collected from urban areas in Sumatra, Sulawesi, and Java islands. The language usage and knowledge of adolescents in Indonesia may differ across contexts; for example, language usage differs in rural and urban areas, language usage in Java island differs from Sumatra island, and different ethnic groups in the same island also may use language differently. This thesis provides the first empirical findings published in international journals on how bilingualism, with its diversity in bilingualism patterns in different ethnic contexts, relates to psychological outcomes among Indonesian adolescents. No empirical study investigating the association between parental cultural maintenance behavior, bilingualism, and psychological outcomes among Indonesian adolescents in urban or rural areas from different islands in Indonesia had been done before. In this project, data were collected from urban areas in different islands among different ethnic groups in Indonesia. In the first study (chapter 2), data were collected from urban areas in Java and Sumatra. Later data for the other studies (chapter 3, 4, and 5) were collected in urban areas in Java, Sumatra, and Sulawesi. The data set of Chapter 5 was an expanded data set of the earlier data of the earlier chapters (Chapter 2, 3, 4), and the data set of Chapter 3 and 4 represents data collected from the same schools, but from different participants from different classes, at different times of data collection, and may overlap.

The integration of the findings of the studies in this project is presented in an adapted conceptual model (Figure 2). Conclusions, implications, and recommendations for further research are presented in the last part of this chapter. Here I start with empirical findings before describing the implications and recommendations.

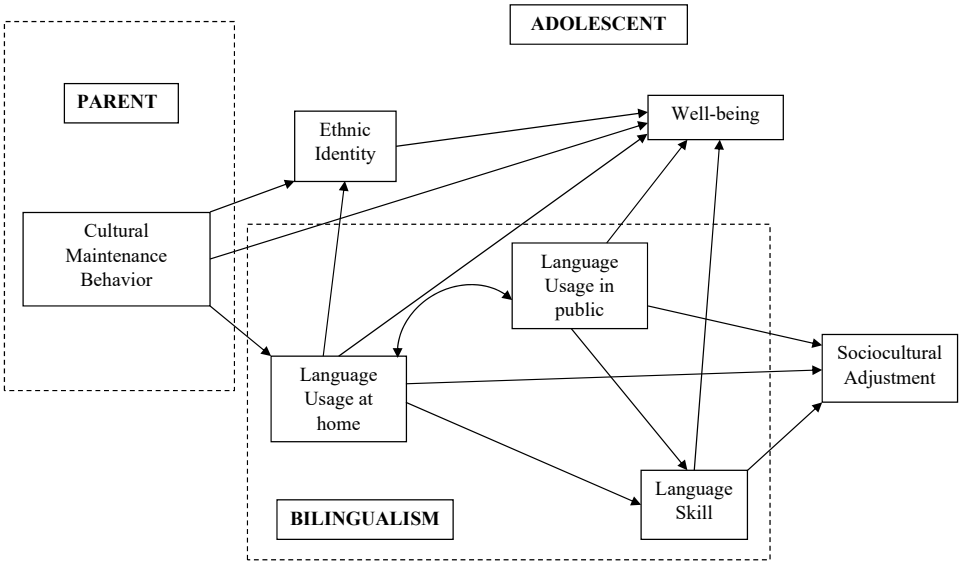


**Figure 1. Conceptual model.**

## EMPIRICAL FINDINGS

The results of the studies in this project are consistent: (1) There are large differences in language knowledge and usage between ethnic groups; Chinese score the lowest in ethnic language vocabulary and usage; (2) for all groups, scores on Bahasa Indonesia (national language) vocabulary are higher than ethnic language vocabulary, which means that national language has become the dominant language for all groups in Indonesia. This is different from the typical immigration context where national language which is the language of the host group dominates language usage; (3) bilingualism comprises some domains and these domains are not strongly related to each other (e.g., high usage Bahasa Indonesia at home but low usage of Bahasa Indonesia in public domain, and low score of ethnic language usage at home but high score on ethnic language vocabulary); and (4) despite the huge difference on language vocabulary scores of two languages between groups, the ranking from easy to difficult words was similar across the languages and there were no specific sets of items that were differentially known in any language. So, there was a global difference in mastery of Bahasa Indonesia and ethnic language, but the type of lexical knowledge adolescents had was not strongly language dependent. Bilingualism is moderated by contextual factors such as ethnic orientation, group size, and political factors.

Regarding the relation between bilingualism and other variables, the results of the four studies showed that among bilingual adolescents in Indonesia, language usage and language skill have different relations to well-being and sociocultural adjustment. Language usage (of two languages) is more important than language skill (of two languages) for sociocultural adjustment, Bahasa Indonesia is more important than ethnic language usage for affective well-being, and parental cultural maintenance behaviour is more important than language usage at home for

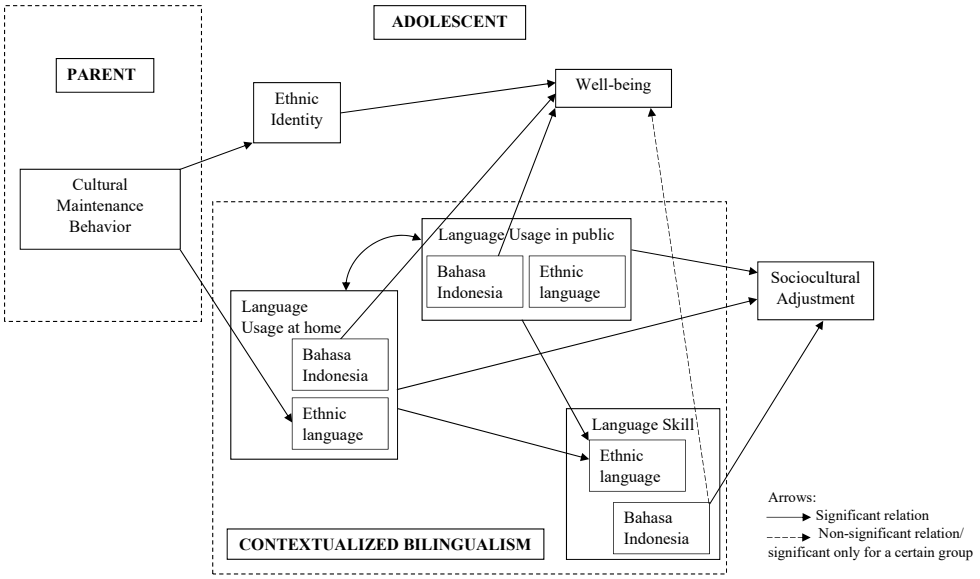


**Figure 2. Adapted Conceptual Model.**

social (national and ethnic) identity and well-being. The details of the findings from each study are presented below. In Chapter 2 we examined the importance of parental culture maintenance behavior, bilingualism, ethnic identity, and national identity for well-being of adolescents. The findings showed that parental culture maintenance was positively related to both ethnic identity and national identity across groups, parental culture maintenance behavior was correlated to the usage of ethnic language at home, but not correlated to usage of Bahasa Indonesia at home; both Bahasa Indonesia and ethnic language usage at home were unrelated to identity. There was no link between parental culture maintenance behavior and between usage of both languages at home and well-being, whereas both national and ethnic identity were positively associated with adolescents' well-being across groups. The conclusion is that parental culture maintenance behavior, ethnic identity, and national identity are important for well-being of adolescents, whereas speaking the language at home is independent from well-being and ethnic identity of adolescents across all investigated Indonesian ethnic groups. However, language usage in public and language skill were not investigated in this study and it was not clear whether the relation of language skill and language usage in public with well-being would be different from the relation between language usage at home and well-being. Therefore, the relation between well-being and bilingualism, mapping all three domains, namely (1) language usage in public, (2) language skill, and (3) language usage at home, is investigated in Chapter 4. How the three different domains of bilingualism are contextualized in Indonesia and how structural characteristics, such as group size in a region, play an important part in ethnic language and Bahasa usage are discussed in Chapter 5. The question whether the positive relation between bilingualism and well-being can also be found in the relation between bilingualism and sociocultural adjustment is addressed in Chapter 3.

In Chapter 3, I investigated how knowledge and usage of two languages at home and in public relate to sociocultural adjustment to both the ethnic and national culture. In this study, a mediation model specifying that the vocabulary knowledge of each language mediates the relation between language usage and sociocultural adjustment was proposed. Despite finding no mediation , bilingualism is important for sociocultural adjustment irrespective of the majority or minority status of the ethnic groups, ethnic language usage matters more than ethnic language knowledge, national language knowledge matters more than ethnic language knowledge, and both national and ethnic language usage associate with adolescents' sociocultural adjustment regardless of differences on language knowledge and usage between groups. It is remarkable that even though we found substantial group differences in ethnic language vocabulary, the correlations between both ethnic language usage at home and in public with sociocultural adjustment are the same across groups. Bahasa Indonesia is not only the lingua franca and the dominant language, but also the second language for *all* groups, including the dominant group, which is different from an immigration context, where the ethnic language of the majority group is typically the lingua franca. Both national and ethnic language usage at home and in public relate to sociocultural adjustment, but regarding language skill, Bahasa Indonesia vocabulary matters more than ethnic language vocabulary for sociocultural adjustment. What about the relation between language skill and language usage in public with well-being? Do language usage and language skill relate to well-being? This question is answered in Chapter 4.

In Chapter 4, I tested a mediation model of the relation in which language usage (both national and ethnic language usage at home and in public) is linked to well-being directly and indirectly through language skill, specifically in vocabulary knowledge. The results showed that despite differences in mean scores on language usage and vocabulary between groups, the same model could be applied across groups: national language usage was positively related to affective well-being; language vocabulary did not mediate this relation; ethnic language usage and vocabulary were independent from affective well-being. The conclusion is that in a non-immigration context like Indonesia in which groups are characterized by an integration of ethnic and national culture the shared lingua franca (both in public and at home) seems to be more important for well-being than the ethnic language of each group.

In Chapter 5, bilingualism in different contexts of multicultural Indonesia was investigated by comparing four ethnic groups (Javanese, Batak, Toraja, and Chinese). Results showed that there were large differences on language usage at home, in public, subjective proficiency, and the Picture Naming Test score on language vocabulary among these four groups. Despite all these large differences, the ranking from easy to difficult words was similar across languages and there were no specific sets of items that were less or better known in any language. It is an indicator of an equally accessible lingua franca (Bahasa Indonesia), which is not used to mark power differentials in society, unlike bilingualism in many Western immigrant contexts where the country's dominant language is often the language with the highest status and where speaking the dominant language can be used as a marker of status.

## DISCUSSION OF THE EMPIRICAL FINDINGS

In line with the findings that bilingualism is beneficial to positive psychological outcomes (e.g. Birman, 1998; Han, 2009; Han & Huang, 2010; Jia, Aaronson, & Wu, 2002; Mustafa & Ilias, 2013; Mouw & Xie, 1999; Ward & Kennedy, 1993), this thesis shows positive associations between bilingualism and well-being, ethnic identity, and sociocultural adjustment. But beyond what has been known, this thesis provides important new findings from the four studies (see chapters 2 to 5). The first finding is that bilingualism comprises of different domains (such as language usage at home, language usage in public, and language knowledge); the second finding refers to how each domain relates to well-being, identity, and sociocultural adjustment differently from or similarly to other domains of bilingualism.



From the results in chapter 2 we learned that ethnic and national identity matter more for subjective well-being than language usage at home, and that parental cultural maintenance behavior relates to well-being through both national and ethnic identity among Javanese, Batak, and Chinese. When bilingualism comprises not only language usage at home, but also language usage in public and language skill (chapter 4), the findings showed that Bahasa Indonesia usage at home and in public matter more than ethnic language usage for affective well-being, and language skill is independent from well-being among Javanese, Toraja, and Chinese. However, we did not investigate whether language skill and ethnic language usage relate to well-being indirectly through ethnic identity. Hence, in further studies it is still needed to be investigated how language skill and ethnic language usage in public may relate to well-being through ethnic identity. The information that we have so far is that Bahasa Indonesia usage matters more than ethnic language usage for well-being, and national/ethnic identity mediates the relation between parental cultural maintenance behavior and well-being of bilingual adolescents in Indonesia.

Study 1 in Chapter 2 shows that links between identities and well-being, often found in Western studies, could be replicated in Indonesia (e.g., Han, 2009; Jia et al., 2002; Han & Huang, 2010). However, beyond the previous findings, this study demonstrates that speaking language does not necessarily correlate with identity and well-being. The study indicates that distinctive aspects, such as speaking a language, can lose their salience for identity when speaking a language is not an implicit ethnic affirmation but a functional aspect of everyday life. Once a language is a ubiquitous and functional way of interacting in a society, it becomes unrelated to identity. A good understanding of the local context is needed to formulate expectations about how and which identities and their associated behaviors matter in groups, especially which identity aspects and identity-related behaviors are relevant for well-being in multicultural societies. Study 3 in Chapter 4 gives more insight on how contextualized bilingualism in Indonesia actually relates to well-being, especially affective well-being. In the Indonesian context where national and ethnic language coexist, the shared lingua franca (national language) seems to be more important for well-being than the ethnic language of each group. From Chapter 3, we know that both national and ethnic language are important for sociocultural adjustment (in line with previous findings, e.g., Mustafa & Ilias, 2013; Ward & Kennedy, 1993, 1994). Although both national and ethnic language usage relate to sociocultural adjustment, only national language knowledge is significantly associated

with sociocultural adjustment in the Indonesian context. Ethnic language knowledge has a strong relation to national language usage, but ethnic language usage does not correlate significantly with sociocultural adjustment.

The additional knowledge we gain from the three studies in Chapter 2, 3, and 4, is that although it is generally known that language usage and skill among bilinguals are important for ethnic identity, well-being, and sociocultural adjustment, how national language relates to those three psychological outcomes may be different from how ethnic language relates to those three psychological outcomes. Since the bilingualism pattern in Indonesia is unique, and measuring language skill, especially language vocabulary, among bilinguals is not a simple matter, we need to know more about the specifics of bilingualism in Indonesia and whether there is a cross-cultural effect on the results of the test on language vocabulary. This pattern of different domains of bilingualism which are contextualized in Indonesia is explained in Chapter 5.

Chapter 5 showed that bilingualism comprises various domains, that bilingualism scores may differ across domains and that the relation between domains are weak (e.g., high usage Bahasa Indonesia at home, but low usage of Bahasa Indonesia in public domain, and high score on ethnic/heritage language knowledge). The absence of differential item function (DIF) of the Picture Naming Test of both languages across groups illustrates that the ethnic cultures do not show differential patterns of words taught to language learners and there may be no ethnically specific words related to cultural practices that adolescents only know in their ethnic language.

Chapter 5 showed that the patterns of bilingualism in Indonesia are more complex than merely two types of bilingualisms; additive and subtractive bilingualism. The Western conceptualization of bilingualism including the concept of additive and subtractive bilingualism (Genesee, 1987; Lambert, 1977; Lambert & Taylor, 1983; Taylor, Meynard, & Rheault, 1977; Wright et al., 2000) cannot be applied in Indonesia. Since the findings of the studies in this thesis provide important information that bilingualism is more complex than what has been known from the Western studies, it is important to consider to do research in various contexts away from the Western context for investigating the relation between bilingualism and psychological outcomes.

We know now that there are at least four different domains of bilingualism, and they may be contextualized: language usage at home, language usage in public, and language subjective and objective skills. How an adolescent perceives his/her language skill and language usage may differ from the actual skill. But regardless of this difference, it is shown that bilingualism matters for ethnic identity, sociocultural adjustment, and well-being in all groups (Figure 2). Language usage and skill vary between ethnic groups, but the relation between language usage and skill with the psychological outcomes is similar across ethnic groups. These findings are in some ways similar with and in other ways different from what we know from a migration context . In such contexts, ethnic language among minority migrants is usually important for ethnic identity and well-being, whereas for a multicultural non-migration context such as Indonesia, the shared lingua franca (national language) matters more for the minority groups than ethnic language for their well-being, and ethnic identity is independent from ethnic language usage. But the relationship between ethnic identity with well-being, and between language usage with sociocultural adjustment are similar with the relations found in the migration context of Western countries. Hence, there are

culturally specific relations between each domain of bilingualism with psychological outcomes. Therefore, when studying the relation between bilingualism and psychological outcomes we have to consider the context of the study. Referring to Bourhis, et al., (1997), this study shows that the three acculturation orientations of both the majority and minority groups may vary in different cultural contexts in different islands in Indonesia. Moreover, Bahasa Indonesia is more important than ethnic language for sociocultural adjustment for all majority and minority groups. Which means that Bahasa Indonesia, which is founded to unite the archipelago Indonesia (Suryadinata, 2003), has become more important than ethnic language for interaction within each ethnic group even within the majority Javanese (see also the study of Abtahian, Cohn, & Pepinsky, 2016).

## CONTEXTUALIZED BILINGUALISM IN INDONESIA



The findings from the studies in this project show that the contextualization of bilingualism, which means that bilingualism patterns differ depending on the contextual factors such as where the ethnic group live (urban area/rural area, developed island/less developed island, etc.) and the social position of the ethnic group, is important for understanding psychological outcomes such as identity, adjustment, and well-being. Contextualized bilingualism, including different aspects of bilingualism such as language usage at home, language usage in public, and language skill, is a complex pattern of relations with identity, sociocultural adjustment, and well-being as it is shown in the adapted model (Figure 2).

This project shows a patterning of similarities and differences on the language usage and skill between groups in one country. It seems that bilingualism in Indonesia is contextualized due to differences of the social environment in the area each ethnic group life. All groups are fluent in the lingua franca, yet the knowledge and usage of their ethnic language is moderated by factors such as group size in one island/area context (e. g. Javanese in Java constitute around 60% of the population in Java island, and Javanese speak their ethnic language more than Batak in North Sumatra which population is only around 40% in North Sumatra) and political factors (e. g. Bahasa Indonesia is strongly supported in education and public life, while the use of Chinese has been forbidden in most of the second half of the previous century).

Vocabulary knowledge of Bahasa Indonesia is independent from language usage, but ethnic language vocabulary is influenced by language usage both at home and in public. It is also obvious that there are huge differences in ethnic vocabulary knowledge between the Chinese and the other three groups, as well as between minority Batak and Toraja compared to majority Javanese, but it is remarkable that even though we found substantial group differences in ethnic language vocabulary, the correlations between both ethnic language usage at home and in public with sociocultural adjustment are the same across groups. All associations between both ethnic language usage and Bahasa Indonesia usage at home as well as in public with sociocultural adjustment are positive for all groups. Hence, when national and ethnic language coexist such as in Indonesia, language vocabulary is not a differentiating factor for sociocultural adjustment, but language usage is. Language usage of both Bahasa Indonesia and ethnic language may imply a broader social network which is known to be related to well-being (e.g., Litwin & Shiovitz-Ezra,

2011; Wang, 2014). Future studies in Indonesia need to be conducted to confirm that the broader social network may mediate the relation between language usage and well-being of adolescents in Indonesia. Another remarkable finding from the study is that the distinction in adjustment to either culture (i.e., the ethnic and national culture) is not found in Indonesia whereas it is commonly found in Western studies.

It is important for Indonesian adolescents, whether belonging to more or to less dominant groups, to be able to speak their ethnic language as well as the lingua franca. Even for the minority immigrant descendants Chinese, whose heritage language is almost gone and replaced by their second language (Bahasa Indonesia), the lingua franca together with their ethnic language usage plays an important role in their adjustment which is known to be important for well-being (Han, 2009; Phinney, Romero, Nava & Huang, 2001; Vedder & Virta, 2005). Overall, language usage, especially lingua franca as second language, plays an important role for well-being, when the lingua franca is used alongside the ethnic language in all groups, not only in an immigration, but also a multicultural non-immigration context. Our study indicates that distinctive aspects, such as speaking a language, are no longer significant for identity when speaking the language is not an implicit ethnic affirmation but a functional aspect of everyday life, which is very different from immigration contexts in Western countries.

Due to the complexity of diverse cultural contexts and language usage policies of multicultural Indonesia, the four prototypes (Bauböck, Heller, & Zolberg, 1996; Bourhis, et al., 1997) which puts state policies into boxes cannot be applied in Indonesia, because the Indonesian state policy toward Chinese is different from the state policy toward the indigenous groups. The difference on the state policies toward indigenous and Chinese groups has influence on the outcomes of language usage and language skill followed by the relation between language usage and skill, and between language and psychological outcomes as it is shown in the data of these four studies. The state policies combined with the variation on how the Chinese experience discrimination or acceptance in different islands also influence the outcome of language usage and skill and the relation between each language with psychological outcomes. The diverse cultural contexts of bilingualism in Indonesia are, therefore, related to how they experience language in daily life, such as the necessity of using ethnic language or Bahasa Indonesia for interacting within their groups, and legitimation issue that Chinese are considered as outsider and the other indigenous groups as the insider.

## THEORETICAL IMPLICATIONS

The extended study on bilingualism in Indonesia contributes to the literature that bilingualism is not a simple matter, but may have different domains which do not relate to each other, and each domain may relate to psychological outcomes such as well-being, identity, and adjustment in different manners. The pattern on how bilinguals use the first and second language may differ from the skill of the first and the second language. The example of the unrelated different domain, is such; an Indonesian adolescent uses ethnic language more than Bahasa Indonesia at home, but still scores higher on Bahasa Indonesia vocabulary than on ethnic language vocabulary. It means

that for adolescents, ethnic language is not the dominant language – even if it is used at home. And well-being of adolescents who speak their mostly ethnic language at home will not differ from the well-being of another Indonesian adolescents who speak mostly Bahasa at home and only know some words in the ethnic language.

Moreover, our data show that mean differences in vocabulary are larger than mean differences in self-rated proficiency as well as in actual usage. It means that bilingualism differences in Indonesia are not identical across aspects or domains of bilingualism. Hence, defining which one is the dominant language is not a simple matter in multicultural Indonesia where every group is a minority group. We cannot simply put bilingualism patterns into boxes such as which language is more dominant than the other language. Bilingualism differences in Indonesia are not identical across our four investigated domains of bilingualism, namely language usage in public, language usage in private life, subjective language skill score, and objective language skill score. Subjective language skill score can be higher than objective language score among Indonesian adolescents, and they are not correlated.



Because of the complexity of bilingualism patterns, a good understanding of the local context is needed to formulate expectations about how bilingualism relates to psychological outcomes such as identity, well-being, and adjustment. Moreover, we need to understand the local context because speaking a language is a ubiquitous and functional way of interacting in a society. Language usage at home may become unrelated to identity and well-being, but the usage of lingua franca may relate to well-being, and language skill of both languages may not relate to well-being, but both national and ethnic identity relate to well-being. Hence, the relations of aspects of bilingualism with psychological outcomes may vary in each aspect of bilingualism with psychological outcomes. Bilingualism is not only about skill and usage, but also about how it is used and needed in different contexts, which in turn influences psychological outcomes. This thesis shows that the positive relation between bilingualism and positive psychological outcomes is generally found, but the relation of each domain of bilingualism with psychological outcomes is culturally specific.

## PRACTICAL IMPLICATIONS

The results of the studies have practical implications for researchers, educators, parents, professionals, and policy makers in understanding bilingualism and its relation to psychological outcomes on adolescents who live in multicultural contexts, both in immigration and non-immigration contexts. Usage in both languages is important for bilingual adolescents from all kinds of minority groups for their well-being, sociocultural adjustment, and (national/ethnic) identity. Parental cultural maintenance behavior is also important for adolescents' (national/ethnic) identity and well-being. Hence, it is important to encourage parents to play their role in educating their children about their ethnic heritage as well as the dominant culture, and it is important to facilitate the adolescents to learn and to use both languages in their daily life. The results show that proficiency is not strongly related to well-being, but language usage is related to sociocultural adjustment, which in turn relates to adolescents' well-being. Hence, it is recommended that all

adolescents regardless of their ethnic background may get a chance to learn their ethnic language and use it both at home and in school for better adjustment and well-being.

In Indonesia, it is especially recommended for Chinese adolescents who almost lost their heritage language to learn their ethnic language. The political policy in the past during Soeharto regime was taken because of the fear that the heritage culture of the Chinese will influence their national identity, but the findings of the studies in this project tell a different story. National identity is independent from ethnic language usage. Moreover, ethnic language usage relates positively to sociocultural adjustment which is important to engage with other ethnic groups in Indonesia, and national language is important for Indonesian adolescents' well-being.

## LIMITATION AND RECOMMENDATIONS

There are limitations of the studies in this thesis which need to be mentioned. Firstly, it is important to note that these data are correlational and that we cannot infer causality in these relationships. Secondly, as it is highlighted in the third and fourth Chapter, we only studied a selection of languages, although we chose languages and ethnic groups that differed in meaningful ways in terms of their status in Indonesia and history. Moreover, not all ethnic languages are taught in schools which made it difficult to find experts and teachers in the respective language, especially regarding the Toraja language in South Sulawesi and Batak in North Sumatra. A limitation in the fourth study is that we do not have a big sample size which would have been needed for the logistic DIF analyses. Since there are only few studies done in the Indonesian context, a replication with different ethnic groups in Indonesia is needed. I also recommend to investigate how language skill and ethnic language usage in public may relate to well-being through ethnic identity, and how sociocultural adjustment relate to identity and well-being among bilinguals. Further, it appears useful to assess ethnic hierarchy empirically, as it may help explain differences between ethnic groups.

## CONCLUDING REMARKS

This thesis has contributed to the theory and research on bilingualism and its relation with psychological outcomes in several ways. Firstly, by extending the study beyond migration and Western contexts, the thesis has enlarged the understanding on contextualized bilingualism beyond the traditional approach in studying bilingualism and its relation with psychological outcomes (e.g. DIF procedures and mediation model). With a remarkable exception of the Chinese language during the Soeharto regime, Indonesia has adopted a policy of multiculturalism, in which expressions of ethnic language and culture were supported and not negatively sanctioned, together with a strong focus on Bahasa in education and public life. My study shows the importance of such contextual conditions to understand bilingualism in its different domains; language usage in private life, language usage in public area, subjective skill, and objective skill. Secondly, adolescents are not yet largely studied related to their bilingualism and how different domains of bilingualism relate to their psychological outcomes, such as identity, well-being, and sociocultural adjustment, in different manners depending in the cultural context. This thesis contributes more in understanding adolescents in multiculturalism. The third is the finding that ethnic identity is

a mediator between parental culture maintenance behavior and well-being of bilingual adolescents which was less known before, although we know that parental culture maintenance behavior relates to ethnic identity, and ethnic identity relates to well-being (Phinney et al., 2001; Smith, Walker, Fields, Brookins, & Seay, 1999). Finally, this thesis has shown the complexity of bilingualism patterns including language skill and usage in different domains, which makes it not advisable to simply put bilingualism in global boxes of bilingualism patterns; it is important to understand the local context to formulate expectations about how bilingualism or each domain of bilingualism relates to psychological outcomes, such as well-being, identity, and sociocultural adjustment.

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# SUMMARY

In this thesis, I explored and investigated the association between bilingualism and psychological outcomes. The thesis shows that the relation between bilingualism and psychological outcomes is universal (at least in the studied groups in Indonesia), but how each domain of bilingualism relates to psychological outcomes can be culture-specific. The pattern of how each domain relates to each other, and how each domain relates to psychological outcomes can be influenced by cultural context. In other words, how bilingualism manifests in skill and language usage occurs in a contextualized manner, and I therefore refer to the phenomenon as contextualized bilingualism..

Through four studies, it is clear that there are consistent huge differences among ethnic groups in Indonesia on language knowledge and language usage, and it is shown that the language usage is not always correlated to language knowledge. However, the relations between bilingualism and well-being, and between bilingualism and sociocultural adjustment are found across groups. Hence, despite the differences on the language skill and usage, bilingualism is important for well-being and sociocultural adjustment of adolescents in non-immigration multicultural context such as Indonesia. Furthermore, the findings also show the complexity of bilingualism. The findings imply that bilingualism comprises various domains, including language skill, self-reported proficiency, and self-reported usage, and that the associations between these components are not always very strong (Chapter 5). Only ethnic language knowledge has a correlation to language usage (Chapter 3 and 4). The findings of the four studies also show that L2 (Bahasa) seems to have become the dominant language in all groups.

In Chapter 2, it is clear that even in the non-immigration context, ethnic identity is important for well-being of adolescents who live in multicultural context, and that parents play an important role in developing the adolescents' ethnic identity by maintaining their ethnic culture. However, different from the immigration context, the relation between language usage at home and ethnic identity, and between language usage at home and well-being were not found in non-immigration multicultural Indonesia. Chapter 4 also shows which domain of bilingualism relates to well-being of bilingual adolescents in Indonesia. In Chapter 4, the findings provide new information that the shared lingua franca is more important than ethnic language for well-being of bilingual adolescents in non-migration multicultural context. The usage and skill of Bahasa relate to ethnic language usage and skill which are influenced by usage of the languages at home and in public, which reflects an integration of two cultures with similar standings. In the context where two culture are integrated with similar standings, the shared lingua franca is more important than the ethnic language, and language usage is more important than language vocabulary for affective well-being.

This integration of two cultures is also shown in Chapter 3, that a strong correlation of ethnic and national sociocultural adjustment is found. Once again, the story is different from the story we find in the Western immigration context where ethnic and national culture usually do not correlate strongly, and that ethnic language usage is usually important for ethnic sociocultural adjustment. In this chapter, the results reveal the same incomplete mediation model in all groups; bilingualism is important for sociocultural adjustment (here combining strongly correlated measures of adjustment to the ethnic and national culture) in all ethnic groups. The Results also show a similar story about the relation between bilingualism among Indonesian adolescents and positive

psychological outcomes (see Chapter 3 and 4), since national language knowledge matters more than ethnic language knowledge for sociocultural adjustment, and ethnic language usage matters more than ethnic language knowledge. Hence, in the context where two cultures are integrated and both languages coexist with a similar standing, language vocabulary is not a differentiating factor for sociocultural adjustment, but language usage is. In this study, the findings show a direct relation between lingua franca and affective well-being which has not been found before. The findings have given new insights, since most studies usually were done among immigrants in Western, educated, industrialized, rich, democratic (WEIRD) societies where the lingua franca is usually the first language of the dominant group and the second language of the minority groups, and the studies usually focus on well-being of the minority groups.

There is no differential item function (DIF) found in the vocabulary knowledge test results of both languages (Chapter 5), and therefore it can be concluded that despite the differences in bilingualism skill and usage, all groups have similar access to different domains of the languages, and this is a unique finding that has not been reported before. An implication of the results is that we have to consider the cultural context very carefully when we investigate the relation between bilingualism, comprises different domains of language skill, language usage in private life and in public, with the psychological outcomes. Because this thesis has shown that bilingualism differences in Indonesia are not identical across aspects or domains of bilingualism, and each domain of bilingualism of each language relates differently to psychological outcomes.

This thesis clearly evidences the complexity of bilingualism patterns including language skill and usage in different domains, which makes it not possible to just simply put bilingualism in global boxes of bilingualism patterns. From this thesis we know that it is important to understand the local context to formulate expectations about how bilingualism in its each domain relates to psychological outcomes, and that the different domains of bilingualism relate to their psychological outcomes in different manners depending in the cultural context. Another important finding is that ethnic identity is a mediator between parental culture maintenance behaviour and well-being of bilingual adolescents which was less known before. Finally, this thesis contributes more in understanding of how bilingualism relates to psychological outcomes among adolescents who become bilingual without migration in a multicultural context such as Indonesia.

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